

**IN THE UNITED STATES DISTRICT COURT FOR THE
NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION**

STEPHEN GEARHART,
individually and on behalf of all
others similarly situated,

Plaintiff,

v.

PORSCHE CARS NORTH
AMERICA, INC.; and DR. ING
H.C.F. PORSCHE AG,

Defendants.

Civil Action No. _____

PLAINTIFF’S LIST OF EXHIBITS

- Exhibit A: Letter from S. Ridella, Director, Office of Defects Investigation, NHTSA, to S. Gold, Vice President “Product Integrity, ARC (Apr. 27, 2023)
- Exhibit B: Letter from S. Gold, Vice President – Product Integrity, ARC, to S. Ridella, Director, Office of Defects Investigation, NHTSA (May 11, 2023)
- Exhibit C: Special Order Directed to ARC, In re: EA 16-003 Air Bag Inflator Rupture (NHTSA May 31, 2023)
- Exhibit D: ARC’s Written Response to May 31, 2023 Special Order, In re: EA 16-003 Air Bag Inflator Rupture (NHTSA June 14, 2023)
- Exhibit E: Current List of Class Vehicles

Exhibit A



U.S. Department of Transportation
**National Highway Traffic Safety
Administration**



BY EMAIL AND U.S. MAIL

Mr. Steve Gold
Vice President – Product Integrity
ARC Automotive, Inc.
1729 Midpark Road, Suite 100
Knoxville, TN 37921
steve.gold@arcautomotive.com

NEF101-sly
EA16-003

Dear Mr. Gold,

As you are aware, on July 13, 2015, the Office of Defect Investigation (“ODI”) of the National Highway Traffic Safety Administration (“NHTSA” or the “Agency”) opened a Preliminary Evaluation (PE15-027) to investigate certain air bag inflators designed by ARC Automotive, Inc. (“ARC”). NHTSA opened its defect investigation after learning of two driver air bag inflator field ruptures involving ARC designed inflators. On August 4, 2016, NHTSA upgraded the defect investigation to an Engineering Analysis (EA16-003) to further investigate allegations of inflator ruptures involving ARC driver air bag inflators. ODI upgraded the investigation after learning of an ARC inflator field rupture in Canada, which resulted in a fatality. The investigation scope was subsequently expanded when NHTSA learned of frontal passenger air bag inflator ruptures in testing.

NHTSA is issuing this recall request letter to notify you that the Agency has tentatively concluded that a defect related to motor vehicle safety exists in the frontal driver and passenger air bag inflators under investigation that were produced before installation of borescopes on all toroidal inflator manufacturing lines in January 2018 (“subject inflators”), and to demand that ARC issue a Part 573 Recall Report addressing that safety defect.

Background on NHTSA’s Investigation

The subject inflators are hybrid, toroidal inflators¹ supplied to Tier 1 air bag module suppliers for incorporation in their completed air bag modules. Through January 2018, 67 million of the subject driver and passenger frontal air bag inflators have been supplied to approximately six Tier 1 air bag system manufacturers. Delphi (acquired by Autoliv) manufactured approximately 11 million of the inflators under a licensing agreement with ARC, which manufactured the remainder of the subject inflators. The subject inflators have been incorporated into air bag

¹ A hybrid inflator uses stored gas that is excited by the propellant to fill the air bag cushion. Toroidal inflators are round, non-cylindrical inflators.

modules used in vehicles manufactured for sale or lease in the United States by at least 12 vehicle manufacturers.

NHTSA's PE investigation focused on understanding the inflator specifications, manufacturing process, ideal performance, potential failure modes, and usage. Based on information gathered during that analysis, NHTSA determined that a field recovery program was required, and the Agency began to work with the relevant stakeholders.

As described above, ODI upgraded the PE to an EA after learning of an ARC inflator field rupture in Canada, which resulted in a fatality. EA16-003 was opened to investigate the potential for driver air bag inflators manufactured by ARC to rupture during frontal air bag deployment resulting in the forceful propulsion of metal fragments into the vehicle compartment. The investigation was subsequently expanded to include frontal passenger air bag inflator following testing ruptures.

ARC is among the companies that have been required to report field ruptures of air bag inflators under NHTSA's Standing General Order (SGO) 2015-02 and as subsequently amended. To further facilitate its investigation, NHTSA issued an additional Standing General Order (SGO 2016-01) to ARC with additional reporting requirements, including preliminary notifications to NHTSA within 24 hours and an expanded scope of reportable incidents (including ruptures during testing). Since the opening of EA16-003, the Agency has learned of multiple additional ARC inflator field ruptures involving the forceful propulsion of metal fragments into the passenger compartment, as further described below.

As has been publicly described, during the manufacturing process of the subject inflators, the inflator center support is friction welded to the upper and lower pressure vessels. A possible byproduct of the friction welding process is known as weld slag (also known as weld flash). Weld slag, if it is loose, along with any other debris inside the inflator center support will follow the air flow out of the exit orifice during a triggered air bag deployment.

ARC's inflator design is such that during a triggered deployment, the stored gas, excited by the propellant, has a single path through the exit orifice to exit the inflator and fill the air bag cushion. Should any debris of sufficient size be in the inflator center support, the exit orifice could become blocked. Blockage of the exit orifice could cause over pressurization of the air bag inflator. Over pressurization of the inflator has the potential to cause it to rupture resulting in metal fragments being forcefully propelled into the passenger compartment.

In January 2018, ARC completed installation of borescopes on all toroidal inflator manufacturing lines. The borescope is used to detect excessive weld slag or other debris in the inflator center support mitigating the possibility of a field rupture due to exit orifice blockage. To date, the Agency is not aware of a testing or field rupture, associated with this alleged defect, of any toroidal ARC air bag inflator built after the installation of the borescope on all toroidal inflator manufacturing lines.

In April 2018, the field recovery test program for frontal driver air bag (DAB) inflators manufactured by ARC was completed. Test samples for model year (MY) 2001-2006 vehicles manufactured by a subset of manufacturers that used air bag modules assembled with ARC

inflators were collected from salvage yards. Testing was conducted in compliance with an agreed upon protocol at ARC's facilities in Knoxville. More than 900 inflators were deployed. The selected number was chosen to give a statistical .99 reliability and .99 confidence level to the results. The results were analyzed on a binomial scale of whether the inflator ruptured. No anomalies were detected in any of the deployments. None of the tested inflators ruptured.

To date, manufacturers have chosen to address the pre-borescope blockage issues and Lot Acceptance Test failures by recalling the specific lot associated with certain ruptures. *See* Recalls 17V-189, 17V-529, 19V-019, 21V-782, 22V-246, 22E-040, 22V-543.

RECALL NUMBER	DATE	COMPANY	MODEL YEAR / MODELS	RECALL POPULATION
17V-189	3/17/2017	BMW	2017MY X5 sDrive35i, X5 xDrive35i, X5 xDrive50i, X5 xDrive35d, and X5 xDrive40e	36
17V-529	8/28/2017	FORD	2017MY MUSTANG AND F150 PICK-UP	650
19V-019	12/21/2018	GENERAL MOTORS	2010-2011MY CHEVROLET MALIBU	1145
21V-782	10/7/2021	GENERAL MOTORS	2008-2017MY BUICK ENCLAVE 2013-2017MY CHEVROLET TRAVERSE	555
22V-246	4/14/2022	GENERAL MOTORS	2015MY BUICK ENCLAVE, GMC ACADIA, CHEVROLET TRAVERSE	2687
22E-040	5/19/2022	GENERAL MOTORS	DRIVER AIR BAG SERVICE REPLACEMENT PARTS	74
22V-543	7/27/2022	VOLKSWAGEN	2016MY VARIOUS AUDI AND VW VEHICLES	1216

In August 2022, NHTSA held a meeting with the affected manufacturers that used toroidal, hybrid driver and frontal passenger air bag inflators designed by ARC (i.e., the inflators that are the subject of NHTSA's EA16-003 investigation). The purpose of the meeting was to assess information learned to date from the investigation and discuss potential next steps. NHTSA sent Information Request letters to the affected manufacturers to refresh the data on frontal passenger air bag inflator usage and performance collected in 2020 and to collect data on frontal driver air bag inflator usage and performance as a result of that meeting. ARC was sent an IR letter to collect specific data on the operation of the borescope and any modifications to process and procedure made since installation.

Recall Request

Despite the growing number of ruptures related to this blockage issue in the subject population demonstrating a safety defect, ARC has not made a defect determination that would require a recall of this population. Based on currently available information, NHTSA has tentatively concluded that a defect related to motor vehicle safety exists in the subject frontal driver and

passenger air bag inflators and demands that ARC issue a Part 573 Recall Report addressing that safety defect.

The National Traffic and Motor Vehicle Safety Act defines motor vehicle safety as “the performance of a motor vehicle or motor vehicle equipment in a way that protects the public against unreasonable risk of crashes occurring because of the design, construction, or performance of a motor vehicle, and against unreasonable risk of death or injury in an accident and includes nonoperational safety of a motor vehicle.” 49 U.S.C. § 30102(8). A defect that occurs in an essential component of a piece of motor vehicle equipment, such as in this matter involving a frontal air bag inflator, presents an unreasonable risk to safety. *See United States v. General Motors Corp.*, 561 F.2d 923, 929 (D.C. Cir. 1977) (“*Pitman Arms*”).

A motor vehicle or component contains a “defect” if it is subject to a significant number of failures in normal operation. *See United States v. General Motors Corp.*, 518 F.2d 420, 427 (D.D.C. 1975) (“*Wheels*”). To establish that a significant number of failures exist, the Agency need only show that the figure is more than *de minimis*. *See id.* at 438 n.84. The Agency must also show that the failure condition occurred under circumstances which, in the absence of a defect, would not have occurred. *See United States v. General Motors Corp.*, 841 F.2d 400, 412 (D.C. Cir. 1988) (“*X-Cars*”). An air bag inflator that ruptures when deploying in a vehicle is plainly defective. At a minimum, the following seven domestic field events involving subject driver and passenger inflators are more than *de minimis*:

- On January 29, 2009, a driver side air bag inflator ruptured in a (MY) 2002 Chrysler Town and Country minivan in Ohio. The air bag module was produced by Key Safety Systems and used a dual stage ARC inflator. The inflator was manufactured in Knoxville. The driver was severely injured during the incident.
- On April 8, 2014, a driver side air bag inflator ruptured in a MY 2004 Kia Optima in New Mexico. The air bag module was manufactured by Delphi and had a single stage ARC inflator. The inflator was manufactured in Knoxville. The driver sustained injuries to her face and legs.
- On September 22, 2017, a driver side air bag inflator ruptured in a 2010 Chevrolet Malibu in Pennsylvania. The air bag module was produced by ZF-TRW and used a dual stage ARC inflator. The inflator was manufactured in Xian, China. The driver sustained facial and head injuries.
- On August 15, 2021, a driver side air bag inflator in a 2015 Chevrolet Traverse ruptured in Michigan. The air bag module was produced by Toyoda Gosei and used a dual stage ARC inflator. The inflator was manufactured in Reynosa, Mexico. The air bag module was a replacement module. The vehicle had been in a prior frontal collision and the original air bag module deployed with no issue. The original air bag module was, also, produced by Toyoda Gosei and used a dual stage ARC inflator. The driver sustained fatal injuries.

- On October 20, 2021, a driver side air bag inflator in a 2015 Chevrolet Traverse ruptured in Kentucky. The air bag module was produced by Toyoda Gosei and used a dual stage ARC inflator. The inflator was manufactured in Reynosa, Mexico. The driver sustained facial injuries.
- On December 18, 2021, a passenger side air bag inflator ruptured in a 2016 Audi A3 e-Tron in California. The air bag module was produced by Joyson Safety Systems and used a dual stage ARC inflator. The inflator was manufactured in Reynosa, Mexico. The driver and passenger were injured.
- On March 22, 2023, a driver side air bag inflator in a 2017 Chevrolet Traverse ruptured in Michigan. The air bag module was produced by Toyoda Gosei and used a dual stage ARC inflator. The inflator was manufactured in Reynosa, Mexico. The driver sustained facial injuries.

Based on certain of these field incidents, vehicle manufacturers conducted the recalls listed above.

In addition, NHTSA is aware of at least two field incidents outside the United States:

- On July 11, 2016, a driver side air bag inflator ruptured in a MY 2009 Hyundai Elantra in Canada. The air bag module was produced by Mobis and used single-stage ARC air bag inflator. The inflator was manufactured in Xian, China. The driver sustained fatal injuries.
- On October 16, 2017, a passenger side air bag inflator ruptured in a MY 2015 Volkswagen Golf in Turkey. The air bag module was produced by Key Safety Systems (now known as Joyson Safety Systems) and used a single stage ARC inflator. The inflator was manufactured in Knoxville. The driver sustained no injuries. There was no passenger in the vehicle.

The subject inflators pose an unreasonable risk of death or injury that may result from an item of motor vehicle equipment that, when not defective, is designed to save lives. Air bag inflators that project metal fragments into vehicle occupants, rather than properly inflating the attached air bag, create an unreasonable risk of death and injury. Accordingly, the Agency makes this demand that ARC immediately submit to NHTSA a Part 573 Recall Report that identifies a safety defect in the subject driver and passenger air bag inflators.

NHTSA's request that ARC conduct a safety recall does not constitute a formal conclusion by NHTSA with respect to the evidence in its investigative file. Also, this recall request does not constitute an initial or final decision that the subject inflators contain a safety defect pursuant to 49 U.S.C. § 30118, an order to recall vehicles, or a decision that ARC violated the law.

If ARC decides not to conduct the requested recall, it must provide ODI with a full explanation of its decision, including any additional analysis of the problem beyond ARC's past presentations. If ARC fails to initiate a recall, the Agency may proceed to an initial decision that

this air bag inflator contains a safety defect, pursuant to 49 U.S.C. § 30118(a), and may take other appropriate action. An initial decision will be accompanied by the publication of a Federal Register notice describing the alleged safety defect and the ODI investigation and scheduling a public meeting.

ARC's written response to this letter referencing the identification codes in the upper right-hand corner on page 1 of this letter, must be submitted to this office no later than **MAY 11, 2023**, by email to sharon.yukevich@dot.gov. It is important that ARC respond to this letter on time. This letter is being sent pursuant to 49 U.S.C. § 30166, which authorizes this Agency to conduct investigations and require the submission of reports that may be necessary to enforce Chapter 301 of Title 49 of the U.S. Code. Failure to respond promptly and fully to this letter may be construed as a violation of 49 U.S.C. § 30166, which could subject ARC to civil penalties pursuant to 49 U.S.C. § 30165.

If you have any questions about this letter, please contact Sharon Yukevich of my staff at 202-366-4925. If you have any questions regarding the recall procedures, please contact Mr. Alexander Ansley of my staff at 202-493-0481.

Sincerely,

STEPHEN
ANTHONY
RIDELLA

Digitally signed by
STEPHEN ANTHONY
RIDELLA
Date: 2023.04.27 16:24:04
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Stephen A. Ridella, Ph.D.
Director
Office of Defects Investigation

cc: Chris Grigorian, counsel for ARC Automotive, Inc.
R. Nicholas Englund, counsel for ARC Automotive, Inc.

Exhibit B



May 11, 2023

Via E-Mail

Stephen A. Ridella, Ph.D.
Director, Office of Defects Investigation
National Highway Traffic Safety Administration
1200 New Jersey Avenue, SE
Washington, DC 20590

Re: EA 16-003: ARC Automotive Response to Recall Request Letter,
NEF101-sly

Dear Mr. Ridella:

I write on behalf of ARC Automotive, Inc. (“ARC”) in response to the Agency’s April 27, 2023 recall request letter (RRL) to ARC advising that the Agency has “tentatively concluded” that certain frontal driver and passenger airbag inflators manufactured by ARC contain a safety-related defect and requesting that ARC issue a Part 573 Recall Report addressing that defect.

The safety of the motoring public is a cornerstone of our business. NHTSA estimates that airbags have saved tens of thousands of lives and avoided countless serious injuries since their adoption. For more than 50 years, ARC has been dedicated to automotive safety as a leading independent designer and manufacturer of advanced airbag inflator technology. Based in Knoxville, Tennessee, ARC’s culture of innovation has resulted in continuous product development and technological leadership in the design and manufacturing of advanced inflators for driver, passenger, side-impact, seat, and curtain airbag applications. ARC is an expert in system friendly, hybrid-inflator technology with a mission of promoting automotive safety.

ARC takes any potential issue with its products very seriously.¹ As discussed in further detail below, however, ARC strongly disagrees with the Agency’s “tentative conclusion” that a safety defect exists in the 67 million toroidal driver and passenger inflators² produced during the 18-year period prior to January 2018.

I. Introduction

Despite a lengthy investigation, the Agency’s current position is not based upon any objective technical or engineering conclusion regarding the existence of a defect, but rather conclusory statements regarding hypothesized blockage of the inflator orifice from “weld slag”

¹ ARC is a Tier 2 supplier that sells the subject toroidal-shaped, hybrid inflators to Tier 1 manufacturers that produce air bag modules. The Tier 1 manufacturers sell air bag modules equipped with ARC inflators to the vehicle manufacturers. Although the vehicle manufacturers are not ARC’s direct customers, multiple vehicle manufacturers worked directly with ARC during the course of NHTSA’s investigation.

² We have not been able to reconcile the 67 million figure with ARC’s records. As NHTSA notes, however, approximately 11 million of these inflators were manufactured by Delphi, not ARC. ARC is not responsible for this population under the Safety Act or NHTSA’s regulations, as ARC was neither the manufacturer nor importer of these 11 million inflators.

and a subjective inference that a defect exists based upon the occurrence of seven (7) field ruptures in the U.S. The Agency then asks ARC to prove a negative – that the 67 million inflators in this population *are not defective*.

Moreover, while weld slag has not been confirmed as the root cause in *any* of the seven incidents, weld slag was found ***not to be the root cause*** in two of these seven ruptures. In any event, the existence of seven (or, more accurately, *five*) field incidents among the 67 million toroidal driver and passenger inflators produced for the U.S. market during the 18-year period referenced in the RRL across multiple manufacturing lines in different plant locations does not support a finding that a systemic and prevalent defect exists across this population.³

Concerns regarding potential inflator rupture incidents prompted a years-long investigation, which was conducted jointly among NHTSA, vehicle manufacturers, Tier 1 air bag module suppliers, and ARC. After nearly eight years of intensive scrutiny, none of these manufacturers has identified a systemic or prevalent defect across this inflator population. To the extent any root cause could be identified in these ruptures, ARC believes they resulted from random “one-off” manufacturing anomalies that were properly addressed by vehicle manufacturers through lot-specific recalls, all with NHTSA’s approval. In fact, as discussed below, testing of inflators from those recalled lots did not reveal a single additional defective inflator in those lots, thus further suggesting that these ruptures were isolated events. Prior to receiving the RRL, NHTSA had never suggested to ARC (or, as far as ARC is aware, any other manufacturer whose vehicles contain these inflators) that a defect of the scope suggested in your letter existed in this inflator population.

Under the Safety Act,⁴ a “defect” means more than the occasional or isolated failures that are an inevitable part of any volume manufacturing process. Here, the Agency’s RRL falls well short of establishing a common root cause or that these failures were anything other than occasional or isolated.

We were also very surprised by the timing and manner of the Agency’s request. ARC has been working cooperatively and collaboratively with the Agency, the Tier 1 air bag module suppliers, and vehicle manufacturers since this investigation commenced in 2015. In December 2022, the Agency issued new information requests to the manufacturers to gather deployment data so that a proper risk evaluation could be conducted. This evaluation had not yet even been published to ARC or, to our knowledge, the Tier 1s or vehicle manufacturers, when we were notified on April 25, 2023, that a multi-disciplinary panel (MDP) would be convened the next day to consider whether to issue an RRL. On the following day, we were advised that the MDP decided to issue the RRL, which ARC received the next day. The Agency did not afford ARC– or any of the other potentially affected manufacturers – an opportunity to provide views on the matter, as has been the Agency’s standard practice.

³ ARC started production of the compact advanced hybrid driver (CADH) inflator in 2000. ARC started production on the passenger-hybrid 7 (PH7) inflator in 2010.

⁴ The National Traffic and Motor Vehicle Safety Act of 1966, as amended (49 U.S.C. 30101 *et seq.*)

ARC also takes issue with the Agency's demand that ARC "issue a Part 573 Recall Report" and "conduct a safety recall" of the subject inflators. As the Agency is fully aware, NHTSA's authority to require certain manufacturers to conduct safety recalls does not extend to manufacturers of original equipment, such as ARC. Rather, the Safety Act and NHTSA's implementing regulations expressly provide that *vehicle manufacturers*, not original equipment manufacturers, shall have recall responsibility for any defects found in original equipment installed in their vehicles. While original equipment manufacturers may be required to *notify* NHTSA of a defect in their equipment under certain circumstances, they cannot be compelled to conduct a safety recall. Because ARC cannot be compelled to conduct a safety recall, the only possible objective of NHTSA's RRL is to force ARC to make a statement back to NHTSA that the inflators are defective, a statement that has no regulatory significance or effect. As such, NHTSA's demand for ARC to issue a "recall" of the subject inflators is misguided, not in accordance with law, and exceeds its statutory authority.

While we do not agree that a defect within the meaning of the Safety Act exists in the population of toroidal driver and passenger inflators from start of production through January 2018 as the Agency suggests, or that the Agency can compel ARC to conduct a safety recall of its original equipment, ARC remains deeply committed to further cooperation with the Agency and ARC's customers to address any concerns. In this regard, ARC and General Motors have had discussions regarding the three Chevy Traverse incidents listed in your letter and addressed below. While no root cause for those ruptures has been identified by ARC or GM (and with the inspection of the third incident having only recently occurred), we have been advised that GM is initiating a recall of a population of approximately 994,000 MY 2014 – 2017 vehicles equipped with the "MC" inflator variant produced by ARC. This is an expansion of its two prior recalls (Recall Nos. 21V782 and 22V246). We understand that this action is being taken out of an abundance of caution to address *potential* concerns about the inflators in this population of vehicles while the manufacturers continue their analysis of these incidents. This decision is tailored to address a specific population and bears some relationship to a potential pattern of field ruptures that has emerged (as three of the seven incidents listed in your RRL involved MY 2015 – 2017 Chevy Traverse vehicles). ARC is assessing the scope of GM's recall and evaluating it against the subject inflator population.

II. Background and Investigation History

To put the Agency's RRL and ARC's response in the proper context, we briefly summarize below the nearly eight-year history of this investigation and ARC's full cooperation.

A. NHTSA Initiates a Preliminary Evaluation

On July 13, 2015, NHTSA's Office of Defects Investigation (ODI) opened a Preliminary Evaluation (PE) related to driver-side inflators manufactured by ARC between 2002 and 2004. *See* NHTSA PE15-027. As stated in the opening resume, ODI opened the inquiry based on two field incidents involving alleged over pressurization of driver-side inflators, one involving a dual-level inflator design in a 2002 Chrysler Town and Country minivan (which occurred in 2009) and one involving a single-level inflator design in a 2004 Kia Optima (which occurred in 2014). The opening resumé further stated that the subject inflators' designs utilize "a hybrid design that fills

the air bag by releasing an inert gas mixture stored in the inflator at high pressure.” *See* NHTSA’s Opening Résumé, PE 15-027.

During the PE phase of the Agency’s investigation, ARC responded to two formal information requests (“IRs”) issued by NHTSA – a July 17, 2015 IR seeking general background information on ARC and a follow-up request on August 25, 2015 seeking detailed descriptions of design, manufacturing and quality control processes covering driver-side inflators produced between the start of production and October 2004, along with analyses of the two reported field failures. In addition to responding to these formal IRs, ARC initiated several in-person meetings, multiple phone conference calls, and numerous e-mail exchanges with NHTSA, all to ensure that the Agency had the documents and information it needed to conduct its investigation and that the investigators clearly understood the information provided.

On July 27, 2015, NHTSA issued two standing general orders (“SGOs”) under PE 15-027 (this investigation) and EA 15-005 (regarding Takata air bag inflators) directing vehicle manufacturers (SGO 2015-01) and original equipment suppliers of air bag module and inflators (SGO 2015-01A) to report certain field incidents related to inflator ruptures. On August 17, 2015, NHTSA superseded SGO 2015-01 and SGO 2015-01A with SGO 2015-02 and SGO 2015-02A to clarify the reporting obligations. Essentially, these SGOs required the identified manufacturers (which included ARC) to report certain information related to alleged field ruptures of which the manufacturer received notice. Both SGOs remain in place today.

In March 2016, NHTSA attended an extensive, in-person briefing in Knoxville, Tennessee at ARC’s offices addressing ARC’s evaluation of the potential root causes of the field incident involving a 2004 Kia Optima. The briefing, which was also attended by representatives from the Tier 1 supplier and vehicle manufacturer, included a tour of ARC’s Knoxville manufacturing lines.

Following that briefing, the Agency explored methods for collecting additional data to aid its evaluation. To this end, ODI and ARC, along with the Tier 1 suppliers and vehicle manufacturers that installed driver-side inflators from the relevant production period⁵ and the same manufacturing line⁶ into their products, discussed a voluntary program whereby the manufacturers would collect inflators from the field for testing. As conceived by ODI and its statisticians, the manufacturers could evaluate the potential field risk using concepts from reliability engineering by firing inflators collected from the field to establish 99% reliability at a 99% confidence level. According to ODI, NHTSA’s statisticians estimated that this target reliability and confidence level could be established for the two inflator designs (the single-level CADH and dual-level CADH inflators) by firing 459 units of each type without a rupture.

⁵ During the PE phase, NHTSA focused its investigation on ARC’s “compact advanced driver hybrid” inflators, or CADH, that were produced from the start of production to October 2004. As NHTSA explained in the August 25, 2015, IR, “[t]his time frame is based on the dates of manufacture of the two inflators known to have ruptured in field incidents,” i.e., the 2002 Chrysler Town and Country minivan in Ohio and the 2004 Kia Optima in New Mexico that NHTSA identifies on page 4 of the RRL.

⁶ ARC manufactured the dual-level CADH inflator in the Town & Country minivan on May 13, 2002, on Line E of ARC’s Knoxville facility. ARC also manufactured the single-level CADH inflator in the Kia Optima August 27, 2003, on Line E in ARC’s Knoxville facility.

ARC, Tier 1 manufacturers, and vehicle manufacturers voluntarily agreed to conduct the field recovery program. The agreed-upon field recovery program aimed to fire 459 single-level inflators and 459 dual-level inflators collected from salvage yards around the United States. To collect the parts, ARC would ensure the parts were produced relatively close in time to the production dates of the parts involved in the two field incidents under evaluation (i.e., MY 2002 Chrysler Town & Country and MY 2004 Kia Optima). Initially, ARC identified the serial numbers for the 25,000 inflators produced immediately before and after each of the production dates, for a total of 100,000 serial numbers. The Tier 1 and the vehicle manufacturers used the 100,000 serial numbers to trace the inflators to specific VINs.

After the Tier 1 and vehicle manufacturers identified relevant VINs, the manufacturers and ODI agreed to a testing process. In October 2016, ARC used a NHTSA-recommended vendor to search salvage yards for relevant inflators. Between November and December 2016, the vendor began shipping parts to ARC's engineering lab in Knoxville, Tennessee, for inspection and testing.⁷ To test the inflators, ARC inspected and x-rayed each inflator,⁸ deployed the inflators in test tanks, recorded whether parts ruptured during testing, and periodically shared the cumulative results with NHTSA and the other manufacturers.⁹ To speed the collection of parts, two additional vendors began collecting and shipping inflators for testing in the first half of calendar year 2017.

By the fall of 2017, the program had exhausted the 100,000 inflator serial numbers initially targeted, but the field recovery program had not yet reached the targeted number of inflators. After discussions with NHTSA and the field recovery group, the group agreed to expand the production window, which allowed the vehicle manufacturers to identify additional vehicles that used subject inflators. The field recovery group and NHTSA agreed to conduct a second round of collection that included additional vehicles. With the expanded search, the second round of collection allowed the manufacturers to reach the target of 459 single-level and 459 dual-level inflators.

On May 10, 2018, ARC finished testing all the field collected inflators and submitted the results to NHTSA. None of the 918 inflators ruptured in the tests. Accordingly, the test program demonstrated with 99% reliability and 99% confidence that the inflators in the subject population would deploy without rupturing. At that time, the results were consistent with ARC's prior analysis of production data, quality controls, and investigations of the two units from the field reports: the available data did not identify a systemic issue with these inflators. Moreover, we note that, at that time of this recovery program, inflators from this production period had experienced between approximately 12 and 16 years of field exposure with no other reported ruptures. This population is now up to 21 years old with no other reported ruptures.

⁷ ARC kicked off testing in the field recovery processes at an in-person meeting in Knoxville that was attended by NHTSA and representatives from the involved Tier 1 and vehicle manufacturers. The kick-off meeting included a live test observed by those attending the meeting.

⁸ Where an inflator x-ray appeared to have an above average amount of weld flash, ARC CT scanned the inflator prior to testing the inflator.

⁹ Respecting the confidentiality of the individual manufacturer's test results, ARC shared results for specific inflators only with the respective manufacturer to which the inflator was initially supplied. All results, including inflator-specific results, were shared confidentially with NHTSA.

Despite the foregoing, including the fact that the field recovery program satisfied the confidence and reliability levels established by NHTSA's statisticians, the Agency is now demanding that ARC declare these inflators defective.

B. NHTSA Upgrades the PE to an Engineering Analysis

As the parties were conducting the field recovery program, NHTSA alerted ARC to a field incident in Newfoundland, Canada involving a single-level CADH inflator in a 2009 Hyundai Elantra. Shortly after learning of this incident, NHTSA upgraded its investigation to an Engineering Analysis (NHTSA No. EA16-003) and expanded the scope of its investigation to "various models equipped with ARC air bag inflators." *See* NHTSA EA16-003, Opening Resumé, August 4, 2016. On August 9, 2016, NHTSA issued a third information request to ARC, which required ARC to identify to which Tier 1 customers ARC supplied toroidal inflators for use in passenger vehicles from the start of production to the date of the letter.¹⁰ The expansive request sought worldwide production numbers and detailed customer information including part and serial numbers, manufacturing locations, and shipping addresses as well as any information ARC had related to the intended vehicle manufacturer and the market where the vehicles would be sold.

After ARC identified its customer list of Tier 1 suppliers in September 2016, the Agency issued a series of IR letters to the Tier 1 suppliers and, subsequently, to the vehicle manufacturer customers identified by the Tier 1 suppliers. These IR letters sought detailed information related to production numbers (broken out by year) for all hybrid, toroidal-shaped frontal (driver or passenger) air bag modules using ARC inflators. After receiving customer information from the Tier 1 suppliers, NHTSA issued IR letters to the identified vehicle manufacturers seeking further information to identify vehicles equipped with ARC frontal (driver or passenger) inflators. The IR letters also sought related information such as a list of all suppliers of inflators used by the manufacturers and descriptions of quality processes to ensure inflators adhered to design, performance, and test parameters. NHTSA further sought data related to any testing failures, root causes, and countermeasures implemented.¹¹

C. NHTSA Issues SGO 2016-01 and SGO 2017-01 Seeking Reports of Quality Testing that Involved Inflator Ruptures

After NHTSA learned of instances of lot acceptance testing (LAT) that involved poor welds on passenger hybrid 7 (PH7) inflators, NHTSA informed ARC that it wanted to receive information related to any future LAT testing that involved a potential inflator rupture. On October 11, 2016, ARC received NHTSA's SGO 2016-01, which the Agency directed only to ARC, seeking certain information related to quality testing that involved an "inflator rupture," whether in the United States or abroad.¹² On October 14, 2016, ARC submitted its first report under SGO

¹⁰ ARC provided data related to CADH and PH7 inflators, as well as its DH8 hybrid inflator, a low-volume inflator not sold in the United States.

¹¹ ARC understands that at least portions of the responses to these IR letters from the Tier 1 and vehicle manufacturers were submitted under requests for confidential treatment in accordance with 49 C.F.R. Part 512. While ARC provided supporting data (such as serial and lot numbers and related information) to the Tier 1 suppliers to assist in their responses to NHTSA, the information in their responses has not been shared with ARC. Consequently, ARC's knowledge is limited to those portions of these responses that NHTSA has placed into the public investigation files.

¹² SGO 2016-01 broadly defined inflator rupture as any incident (or alleged incident) "by which some mechanism (e.g., excessive internal pressure inside the inflator) causes the inflator body to burst or break apart at any time." The incidents included "all

2016-01. After receiving SGO 2016-01, ARC met in person with personnel from NHTSA's Office of Chief Counsel to discuss the requirements of the newly issued SGO.

ARC continued submitting reports under SGO 2016-01 and, on April 7, 2017, NHTSA issued an amended order, SGO 2017-01, based upon reports submitted to NHTSA and discussions with ARC, requesting additional information related to certain categories of conformance testing, as well as clarifying requested information and amending the requirements for additional monthly reports. *See* SGO 2017-01.

D. NHTSA's April 7, 2017 Special Order

Also on April 7, 2017, the Acting Chief Counsel issued an expansive special order to ARC. The special order contained 56 requests seeking a broad range of information covering all inflators ARC produced for any market in the world. The requests sought detailed information on ARC's manufacturing processes, quality systems, maintenance procedures and records, machinery used in welding, quality control processes and testing, and lists of inflator ruptures in the field and during quality checks, along with any reports or analysis of these events. ARC provided thousands of documents (~2 TB) from all manufacturing plants worldwide in its response. NHTSA never advised ARC of any conclusions the Agency reached, if any, based upon this data.

E. Collaboration Team Formed

In May 2017, at ODI's request, a group of vehicle manufacturers, Tier 1 suppliers, a third-party friction welding consultant, ARC, and NHTSA formed the Collaboration Team (also referred to as the ARC Joint Task Force) to investigate ruptures that occurred during certain quality tests of *passenger-side* inflators as early as January 2017. The Collaboration Team, led by a Tier 1 supplier, included several Tier 1 suppliers and vehicle manufacturers, as well as NHTSA and Transport Canada, to investigate the root cause of LAT failures that resulted in over pressurization.

As a party to the Collaboration Team, NHTSA was granted access to the confidential design and investigation information and the analyses that were used or generated by this team. This information included regular updates related to the investigations into the root cause of the test-related ruptures. Moreover, ODI personnel participated in the Collaboration Team conference calls, which included updates on the investigation, and the team's conclusions were presented to NHTSA.

Consistent with the team's conclusions, ARC implemented changes to the weld schedules of the existing IFW friction welders and implemented an automated borescope inspection system. There were no identified issues, problems, or concerns related to the weld schedule changes to the IFW systems. Subsequently, ARC invested in capital improvements through the acquisition of state-of-the-art Izumi friction welders. All participants, including NHTSA, agreed to the corrective actions. The Collaboration Team's work was concluded without further activities. To ARC's

incidents or alleged incidents other than a field rupture as defined by [SGO] 2015-02A, including but not limited to ruptures occurring during testing." SGO 2016-01 *Definitions* No. 3. Further, NHTSA broadly defined "notice" of a rupture to include information received from any source and in any form "about an incident in which an inflator ruptured or is alleged to have ruptured," but excluded "rumors or allegations from third parties that are not widely disseminated." *Id.* at *Definition* No. 4.

knowledge, NHTSA did not ask any party to conduct a recall based upon the work of the Collaboration Team.

F. NHTSA Issued Additional Information Requests

On August 18, 2020, NHTSA issued another information request to ARC seeking production information and test deployments related to PH7 inflators. Among this information, NHTSA requested quantities of successful deployments of PH7 inflators during testing at ARC. In September 2020, similar requests were submitted to the Tier 1 and vehicle manufacturers that ARC identified in its response to the August 2020 IR.

On August 31, 2022, NHTSA held a meeting (including both in-person and remote participants) with representatives from ARC and what we believe included all Tier 1 and vehicle manufacturers using CADH or PH7 inflators. During the meeting, NHTSA outlined the history of its investigation and discussed collecting additional data to support its investigation. To facilitate collection of this additional data, NHTSA advised that it would be issuing additional information requests seeking data for the CADH inflators similar to the 2020 information request that covered PH7 inflators, including successful deployments and the OEMs' opinion on field quantities of successful field deployments. NHTSA issued those information requests in December 2022, with response dates in approximately February 2023.

In December 2022, NHTSA issued two information requests to ARC: the request for deployment data related to CADH inflators (referenced in the preceding paragraph) and a request seeking detailed information related to process changes ARC implemented, including an automated borescope check recommended by the Collaboration Team. The information also included details on the borescope accept/reject quantities from the start of its use and dates the process was implemented on each manufacturing line. ARC provided its responses to both requests during February 2023.

ARC understands that the additional data NHTSA requested in December 2022 was submitted by the respective manufacturers in approximately February 2023. The responses would have included deployment numbers that would be critical to any type of rate analysis necessary to evaluate statistical risk. If NHTSA has evaluated these responses and determined an overall deployment rate, the Agency has not shared any such analysis with ARC (or, as far as we are aware, any of the other manufacturers). ARC requests that NHTSA share this data with ARC to enable it to evaluate and address it. (We note that the RRL does not make reference to this data, which we believe would be critical in properly assessing field risk.)

III. NHTSA's RRL Is Procedurally Faulty: As a Manufacturer of Original Equipment, ARC Cannot Be Compelled to Conduct a Recall Campaign

The stated purpose of NHTSA's RRL is to "demand that ARC immediately submit a Part 573 Recall Report" and "conduct a safety recall." RRL at p. 5. Even if a defect were determined to exist in this broad population of inflators, there is no legal basis for NHTSA's "demand" that ARC conduct a safety recall. NHTSA's authority to require manufacturers to conduct safety recalls does not extend to manufacturers that supply original equipment for installation in new motor vehicles. Rather, the Safety Act and NHTSA's implementing regulations expressly provide that

vehicle manufacturer, not the manufacturer of original equipment, shall have recall responsibility for any defects found in original equipment installed in their vehicles. While manufacturers of original equipment may be required to *notify* NHTSA of a defect that has been determined to exist in their equipment by the vehicle manufacturers under certain circumstances, they cannot be compelled to conduct safety recalls. As such, NHTSA’s demand for ARC to issue a recall of the subject inflators is improper.

The starting point for understanding the allocation of recall responsibility among vehicle manufacturers, original equipment manufacturers and replacement equipment manufacturers is 49 U.S.C. Section 30102(b)(1)(C), which defines “original equipment” as “motor vehicle equipment (including a tire) installed in or on a motor vehicle at the time of delivery to the first purchaser.”¹³ The statute further provides that “a defect in original equipment, or noncompliance of original equipment with a motor vehicle safety standard prescribed under this chapter, is deemed to be a defect or noncompliance of the motor vehicle in or on which the equipment was installed at the time of delivery to the first purchaser.” Section 30102(b)(1)(F).

These provisions reflect Congress’s explicit intent that *vehicle manufacturers* would be responsible for safety-related defects involving original equipment installed in their vehicles. This allocation satisfies an important policy objective. Congress recognized that the vehicle manufacturer selects the components, assemblies, and systems that are incorporated into the completed vehicle, specifies their design and performance requirements, and is responsible for integrating the thousands of parts contained in a vehicle. Moreover, the vehicle manufacturer often possesses the relevant facts and data necessary to make a proper defect determination and the good faith evaluation of the safety risk that the Safety Act requires, including access to warranty data, consumer complaints, field reports and other relevant information. Suppliers typically do not have access to such information. Indeed, some suppliers may not know in which vehicle makes and models their components are installed by the vehicle manufacturer. Additionally, beyond making the requisite safety defect determination, the vehicle manufacturers are in the best position to implement the recall campaign, as they have access to VIN information necessary to identify affected vehicles, warranty relationships with owners, and the dealer/service network necessary to provide the remedy. Tier 2 suppliers such as ARC do not have access to such information or networks.

Consistent with this intent, other Safety Act provisions – the defect notification provisions (§§ 30118 and 30119) and the remedy provision (§ 30120) – affirmatively establish that manufacturers of original equipment do not have recall responsibility. Section 30118(c) contains the provision that requires a manufacturer to report to NHTSA when the manufacturer identifies a safety-related defect, but that provision expressly applies only to manufacturers of motor vehicles and replacement equipment: “A manufacturer of a motor vehicle or replacement equipment shall notify the Secretary . . . if the manufacturer – (1) learns the vehicle or equipment contains a defect and decides in good faith that the defect is related to motor vehicle safety; or (2) decides in good

¹³ 49 U.S.C. § 30102(b)(2) authorizes NHTSA to modify these definitions by regulation and NHTSA exercised this authority in 1978 by modifying the definition of “original equipment” to exclude tires. 43 *Fed. Reg.* 60165 (Dec. 26, 1978). The effect of this amendment was to make tire manufacturers (rather than vehicle manufacturers) solely responsible for defects and noncompliances in original equipment tires as well as replacement tires. Thus, when discussing the obligation of manufacturers of original equipment throughout this letter, we are referring to original equipment other than tires.

faith that the vehicle or equipment does not comply with an applicable motor vehicle safety standard . . .” (Emphasis added.) Manufacturers of original equipment are not covered by this requirement.

Likewise, Section §30120 states that “the manufacturer of the defective or noncompliant motor vehicle or replacement equipment shall remedy the defect or noncompliance without charge when the vehicle or equipment is presented for remedy.” (Emphasis added.) Again, Congress expressly limited the application of this section to manufacturers of motor vehicles and replacement equipment; it does not apply to manufacturers of original equipment.

NHTSA’s regulations are consistent with this statutory allocation of recall responsibility. Part 573 (of 49 C.F.R.) requires reporting to NHTSA in the event a defect has been determined to exist as required by 49 U.S.C. § 30118. Section 573.3(e) states that, for original equipment used in the vehicles of only one manufacturer, reporting to NHTSA may be made by either the manufacturer of the original equipment or the vehicle manufacturer. Section 573.3(f) states that, for original equipment used in the vehicles of two or more manufacturers, both the equipment manufacturer and the affected vehicle manufacturers must submit a report to NHTSA.¹⁴ But these provisions merely determine which entity or entities must notify NHTSA if a defect is determined to exist. That determination is required by § 30118, which (for the practical reasons discussed above) applies only to vehicle manufacturers and manufacturers of replacement equipment. The provisions of Part 573 do not themselves impose an obligation on the manufacturer of the original equipment to make such a determination or to conduct a safety recall. In fact, § 573.5, entitled “Defect and Noncompliance Responsibility,” makes this abundantly clear: “(a) Each manufacturer of a motor vehicle shall be responsible for any safety-related defect or any noncompliance determined to exist in the vehicle or in any item of original equipment.”

The owner notification and recall procedures contained in 49 C.F.R. Part 577 are consistent with this regulatory scheme. First, Part 577’s “Application” section (§577.3) states that these procedures apply only to manufacturers of vehicles and replacement equipment. Second, §577.5, which sets forth the owner notification requirements, provides:

(a) When a manufacturer of motor vehicles or replacement equipment determines that any motor vehicle or item of replacement equipment produced by the manufacturer contains a defect that relates to motor vehicle safety, or fails to conform to an applicable Federal motor vehicle safety standard, the manufacturer shall provide notification in accordance with paragraph (a) of § 577.7 . . . (emphasis added).

There is no reference to a manufacturer of *original equipment* determining that its equipment contains a defect. This absence reflects NHTSA’s acknowledgment that manufacturers of original equipment are not statutorily required to make such determinations, leaving it to the vehicle manufacturers to decide whether their vehicles containing that equipment have a safety defect.

¹⁴ NHTSA requires reports from original equipment suppliers under these circumstances so that the agency can take appropriate action with respect to other potentially affected vehicle manufacturers (e.g., contact them to inquire whether they agree with the supplier’s defect/noncompliance determination, urge them to conduct a recall, monitor recall effectiveness, etc.).

Finally, the statutory and regulatory procedures for NHTSA to make an initial or final decision that a safety defect exists and to order a recall apply only to manufacturers of motor vehicles and replacement equipment. *See* 49 USC 30118(a).

As we acknowledge above, Part 573 does impose a limited information reporting obligation on manufacturers of original equipment under certain circumstances, but, again, it does not impose an affirmative obligation for such manufacturers to make safety defect determinations or to conduct safety recalls. As applicable to manufacturers of original equipment, these reporting requirements are merely informational.¹⁵ To the extent the Agency is requesting that ARC file a Part 573 report in order to provide information related to ARC's customers for various inflator models, we note that this information has been previously provided to the Agency.

Because ARC cannot be compelled to conduct a safety recall, the only possible objective of NHTSA's RRL is to force ARC to make a statement back to NHTSA that the inflators are defective, a statement that has no regulatory significance or legal effect on the vehicle manufacturers that installed these inflators. Each of these manufacturers must make its own safety defect determination.

As such, NHTSA's demand for ARC to conduct a safety recall of the subject inflators is misdirected, not in accordance with law, and exceeds its statutory authority.

IV. ARC Has Not Determined that the Toroidal Inflator Designs Contain a Safety-Related Defect Under the Safety Act from the Start of Production Through January of 2018

As the discussion above demonstrates, ARC has cooperated extensively with ODI personnel and submitted voluminous amounts of data to the Agency. ARC has also worked extensively with its Tier 1 customers and the vehicle manufacturers throughout this investigation in an effort to determine the possible root cause(s) of the field failures. As the Agency noted in its RRL, vehicle manufacturers have recalled specific lots associated with certain ruptures that indicated a potential defect in additional inflators within the same lot. ARC has cooperated with the vehicle manufacturers that made these determinations. This "lot" recall approach was not only satisfactory to NHTSA, but the Agency endorsed such an approach. In fact, as far as ARC is aware, the Agency has never pressed a vehicle manufacturer to conduct a more expansive recall based upon these rupture events.

¹⁵ There are provisions elsewhere in NHTSA's regulations that apply to manufacturers of original equipment. For example, 49 C.F.R. § 579.5 requires all manufacturers of vehicles and motor vehicle equipment (both original and replacement) to provide copies of bulletins, notices, and other communications the manufacturer sends to two or more customers, dealers, manufacturers, etc. relating to non-safety related defects (§ 579.5(a)) or relating to non-safety campaigns (§ 579.5(b)). And NHTSA's early warning reporting regulation (adopted pursuant to the TREAD Act) requires all equipment manufacturers, including original equipment suppliers, to report to NHTSA certain fatality claims and notices received by the manufacturer. § 579.27. These obligations are likewise intended to facilitate NHTSA's investigative function. Obtaining this information from these suppliers enables NHTSA to evaluate whether the vehicles in which the equipment is installed may contain a safety-related defect or noncompliance. But none of these provisions extend defect determination or recall obligations to original equipment manufacturers.

ARC does not believe that there is a safety-related defect within the meaning of the Safety Act in all frontal driver and passenger, toroidal inflators that ARC produced from the start of production until implementation of its automated borescope process.¹⁶ Neither ARC nor NHTSA has identified a defect in construction, component, or material that is systemic or prevalent across all CADH and PH7 inflators produced prior to implementing the automated borescope process. NHTSA's RRL describes a possible root cause related to abnormal weld flash that, if it is loose, could theoretically block the exit orifice of the inflator and potentially result in an inflator rupture. This potential root cause of inflator ruptures was evaluated by the Collaboration Team.¹⁷ Under the direction of the Collaboration Team, ARC conducted tests to determine the root cause for the formation of abnormal weld flash sufficient to cause blockage and rupture. ***As NHTSA is aware, the studies and experiments conducted under the Collaboration Team were unable to replicate abnormal weld flash sufficient to cause blockage that would result in an inflator rupture.***

Moreover, there have been several testing programs that deployed inflators collected from the field, *but not a single rupture occurred during these tests*. These testing programs include ARC's Field Recovery Program for CADH inflators that deployed 918 inflators (discussed at length above), a testing program conducted by Transport Canada that mirrored the U.S. field recovery program¹⁸ and deployed approximately 600 inflators, a program by Volkswagen Group that deployed approximately 1,200 PH7 inflators collected during a recall campaign in Europe,¹⁹ and a collection program that deployed approximately 300 inflators collected under Recall No. 21V-782 (and GM is continuing this program to collect inflators that will be tested by an independent third party). ***ARC is not aware of any ruptures that have occurred during any of these testing programs.***

During the 18 year-period prior to January 2018, approximately 67 million of the subject inflators were produced for the U.S. market on multiple production lines across different plants. These inflators were supplied to six Tier 1 suppliers and 12 vehicle manufacturers for use in dozens of vehicle models. While any field rupture is an unfortunate event, following the extensive investigation described above, none of these manufacturers has concluded that a systemic defect exists across this broad population. Yet, NHTSA's RRL takes the position that the seven field incidents in the United States "are more than *de minimis*" and justify a potential recall of up to 67 million vehicles.

¹⁶ ARC would like to clarify to the Agency that ARC began implementing the automated borescope process on lines producing PH7 inflators between August 2017 and January 2018. ARC implemented the automated borescope process on the remaining lines producing toroidal inflators between March 2018 and June 2018. This information was shared with the Agency in ARC's Response to NHTSA's December 13, 2022 IR. See ARC Automotive Written Response to Req. No. 1 (submitted to NHTSA on February 28, 2023).

¹⁷ As discussed above, the Collaboration Team was a task force of Tier 1 suppliers, vehicle manufacturers, NHTSA, and ARC. NHTSA participated in the Collaboration Team's regular updates, and it received information related to the task force's work.

¹⁸ Transport Canada (TC) is the Canadian agency that regulates motor vehicle safety analogous to NHTSA in the United States. TC collected parts from the field recovered by Hyundai that were equipped with single-level CADH inflators produced during the same production period as the inflator in the 2009 Hyundai Elantra involved in a fatal accident. ARC understands that TC conducted these deployments at a Canadian government lab. We also understand that TC also conducted inflator tear downs as part of its investigation.

¹⁹ VW conducted a recall of PH7 inflators following the rupture in Turkey, which ARC understands did not involve any injuries.

NHTSA appears to be relying on the D.C. Circuit's decision in *United States v. General Motors Corp.*, 518 F.2d 420 (D.C. Cir. 1975) ("*Wheels*"). As relevant here, the court stated:

Where the Government introduces evidence of a significant number of failures as to which causes like age and expected wear and tear have been negated, it is entitled to rely on a presumption that such failures occurred under conditions of operation that were either within the parameters specified by the manufacturer or reflect reasonably-to-be expected vehicle abuse (ordinary abuse) or failure to maintain. Where, as here, the relevant component is designed to function without replacement or repair for the life of the vehicle, a *prima facie* case of defect can be made simply by showing a significant number of failures.

Id. at 438 (emphasis added). Regarding the meaning of the phrase "significant number of failures," the court explained:

We use the term "significant" to indicate that there must be a non-*de minimus* [*sic*] number of failures. The question whether a "significant" number of failures have taken place must be answered in terms of the facts and circumstances of each particular case. Relevant considerations include the failure rate of the component in question, failure rates of comparable components, and the importance of the component to the safe operation of the vehicle. The number of failures need not be and normally will not be a substantial percentage of the total number of components produced.

Id. n.84. It is noteworthy that in referring to "*de minimis*," the court in *Wheels* had before it a case where there were estimated to be as many as 1,503 claims among a vehicle population of 200,000 vehicles. Even factoring in four wheels per vehicle (thus, 800,000 wheels), this translates to a PPM of 1,879 (or 0.19%). It is not difficult to see why the court would find this figure to be non-*de minimis*. By contrast, there have been seven field ruptures among the 67 million inflators produced during the relevant time period.

Judge Leventhal, who authored the *Wheels* decision, shed further light on the meaning of the term "defect" in a separate opinion issued two years later in which he explained:

Out of any manufacturing process, *some* products are bound to be "lemons." These failures may be due to flaws in the design, construction (including occasional human error on the production line) or inspection process. When the defects are *occasional or isolated*, the risk associated with them is part of the ordinary danger of operating an automobile; minimizing them is one aspect of the quality of a manufacturer's product which consumers choose to pay for. Total elimination of this risk would require a standard of design, construction, and testing that would produce a purchase price so prohibitive that it cannot be taken as the contemplation of Congress. And that obtains even though such a defect may be in a vital component and result in a safety risk. However, the matter stands quite differently where it appears that the defect is *systematic* and is *prevalent* in a particular class of cars.

561 F.2d 923, 929 (D.C. Cir. 1977) (Leventhal, J., dissenting in part) (emphasis added), *cert. denied*, 434 U.S. 1033 (1978).²⁰

ARC does not agree that the seven incidents demonstrate the existence of a systematic and prevalent defect within the meaning of the Safety Act when viewed in light of the total population. Nor has NHTSA provided any objective criteria upon which it bases its tentative conclusion that seven domestic field events involving driver and passenger inflators are more than *de minimis*.

Moreover, at least two of these field incidents – the 2002 Town & Country and the 2010 Chevy Malibu – involved distinctly different failure modes or root causes than the weld-flash concern cited by the Agency in the RRL. A review of these two incidents follows:

- **The 2010 Chevrolet Malibu Inflator Rupture Had a Different Failure Mode**

The root cause of the inflator rupture in the 2010 Chevrolet Malibu did not relate to blockage of the exit orifice. The inflator separation did not occur in the center support and the center support was not elongated, as would be the case if the inflator had over pressurized, which is the failure mode that would result from blockage of the exit orifice. In contrast, the inflator separated near the initiator holders, which is not consistent with a rupture due to over pressurization. None of the other six field incidents involved the inflator separating in this area of the inflator.

Accordingly, this failure was an isolated occurrence that resulted from a distinct failure mode.

- **The 2002 Chrysler Town & Country Had a Unique Root Cause**

The root cause of the inflator rupture in the 2002 Chrysler Town & Country minivan was concluded to be a manufacturing anomaly that resulted in foreign material in the inflator center support. For the CADH design, the center support is friction welded to the upper pressure-vessel. During this welding process, a pin is inserted into the top of the center support so that the flash created during the welding process forms in a shape and pattern that does not restrict or block the exit orifice. After the welding operation is complete, the pin (referred to as the flash-dam pin) is removed from the top of the center support of the recently welded piece and then inserted into the next unit on the manufacturing line that will go through this friction weld process.

An inspection of the exit orifice of the inflator indicated that a piece of metal had been lodged near the exit orifice, likely causing the inflator to rupture. The metal piece appeared to be a foreign material and likely the flash-dam pin.²¹ The material was not “weld

²⁰ The *per curiam* opinion comprises only six sentences of a 15-page opinion. The rest of the opinion consists of Judge Leventhal’s partial dissent, which was largely embraced by the majority. Judge Leventhal disagreed with the majority only on the ultimate issue of whether the government was entitled to summary judgment on the issue of safety-relatedness.

²¹ During an evaluation of the center support, the metal fragment was dislodged from the exit orifice for inspection. ARC understands that NHTSA came to possess the center support fragments involved in this field incident several years after the incident. But the metal fragment that had been lodged near the exit orifice was lost and could not be tested to confirm its composition.

slag.” None of the other field ruptures ARC has inspected had a similar object lodged near the exit orifice.

Furthermore, this incident was one of the two subjects of the Field Recovery Program conducted by the manufacturers and NHTSA.²² As discussed above, this test program demonstrated with 99% reliability at a 99% confidence level that no systemic defect existed in this specific population.

Because none of the other field ruptures involved a similar root cause, this incident is an isolated manufacturing anomaly with a distinct root cause. This conclusion is also supported by results of the Field Recovery Program and the fact that there have been no additional ruptures in any vehicle with this same distinct root cause.

Regardless of whether the number of relevant field incidents is five or seven, in the context of the overall population, there is no basis for concluding that a systemic or prevalent defect exists in this substantial inflator population that would warrant a safety recall of all vehicles equipped with these parts. We address the remaining field ruptures below.

- **Testing Programs Related to the Two Non-U.S. Incidents Cited in the RRL Did Not Reveal Any Defects**

NHTSA’s RRL cited two field incidents that occurred outside the United States: a July 11, 2016, *single-level* CADH (driver) that ruptured in a 2009 Hyundai Elantra in Canada and an October 16, 2017, PH7 (passenger) rupture in a 2015 Volkswagen Golf in Turkey.

A field recovery program was instituted by Transport Canada to test inflators manufactured from the respective line and manufacturing period. Transport Canada worked with Hyundai to collect field parts and it deployed approximately 600 inflators at both a Canadian laboratory and ARC. None of the inflators ruptured during deployment. Additionally, we note that the single-level CADH inflator in the Elantra was manufactured on a line in ARC’s manufacturing facility in Xi’an, China. This manufacturing line did not produce inflators intended for the U.S. market.

Similarly, Volkswagen Group conducted a recall of PH7 inflators in Europe following the incident in Turkey. We understand that VW collected approximately 1200 returned parts during this recall and that all were evaluated and tested, with no defects identified. Moreover, this single-level PH7 inflator (passenger), which was manufactured in ARC’s Knoxville plant, was not manufactured for use in the U.S. market.²³

²² The other subject was the MY 2004 Kia Optima (New Mexico incident), discussed below.

²³ Of course, if the Agency intends to rely on these non-U.S. incidents to support its “non-de minimis” position, these incidents must then be considered in the context of the *full worldwide population* of ARC inflators (vs. the U.S. population of 67 million).

- **Two Field Incidents Listed in NHTSA's RRL Are Remote in Time or Involve Different Inflator Types**

The April 8, 2014, incident in a 2004 Kia Optima in New Mexico involved a *single-level* CADH that was manufactured on August 27, 2003, in Knoxville, Tennessee. The December 18, 2021, incident in a 2016 Audi A3 in California involved a PH7 (*passenger*) inflator that was manufactured on October 13, 2015, in Reynosa, Mexico. None of the remaining five ruptures involved a single-level CADH or PH7 inflator.

As discussed in detail above, the Field Recovery Program tested nearly 1,000 parts that were manufactured on the same manufacturing line as the Kia Optima part between October 2000 and July 2006 (including 65 single-level CADH inflators produced between July 2003 and September 2003, of which 22 were produced on the same production day). None of the inflators deployed in this program ruptured, further suggesting that no systemic defect existed in this population.

- **Field Ruptures Involving Three Chevy Traverse Vehicles**

Three of the seven field ruptures cited in your letter involved MY 2015 – 2017 Chevy Traverse vehicles:

- The August 15, 2021, CADH rupture in a 2015 Chevrolet Traverse in Michigan, with an inflator manufactured on November 16, 2016
- The October 20, 2021, CADH rupture in a 2015 Chevrolet Traverse in Kentucky, with an inflator manufactured on October 5, 2014
- The March 22, 2023, CADH rupture in a 2017 Chevrolet Traverse in Michigan, with an inflator manufactured on May 2, 2016

On March 28, 2023, ARC was advised by NHTSA of the third alleged inflator rupture, and on April 25, 2023, ARC (along with NHTSA, General Motors, and the Tier 1 air bag module supplier) attended a vehicle inspection. ARC visually inspected the part and confirmed that the inflator experienced a rupture. As this was the third such incident in the same vehicle make and model, we understand that NHTSA may have concerns as related to this particular subset of the inflator population.

While we do not agree that a defect exists in the population of toroidal driver and passenger inflators from start of production through January 2018 as the Agency suggests, ARC remains deeply committed to further cooperation with the Agency and ARC's customers to address any concerns about our products. In this regard, ARC and General Motors have had discussions regarding the Chevy Traverse incidents listed in your letter and addressed below. These discussions continued following the third incident. The investigation into these inflator ruptures is continuing, but no root cause for has been identified to date by ARC or GM. We note, however, that during the time period covered by GM's recall, ARC produced approximately 3.2 million dual-level CADH inflators on the same line. Among this population, approximately 457,316 of these inflators were supplied to the Tier 1 supplier for use in Chevy Traverse vehicles, which have

experienced three ruptures. In comparison, approximately 2.74 million inflators from this line were supplied to GM and other vehicle manufacturers with zero (0) ruptures reported.

Although no root cause(s) of the three Traverse ruptures has (have) been identified, on May 10, 2023 GM submitted a Part 573 Defect Information Report to initiate a recall of a population of approximately 994,000 MY 2014 – 2017 Traverse, Acadia, and Enclave vehicles that were equipped with the “MC” inflator variant produced by ARC. According to GM, this recall will be an expansion of its two prior recalls related to the first and second Traverse incidents (i.e., Recall Nos. 21V782 and 22V246). The referenced vehicle population generally corresponds with an inflator production date range of approximately 2013 to 2016, but this information will be confirmed by ARC.

We understand that GM’s action is being taken out of an abundance of caution to address *potential* concerns about the inflators in this population of vehicles while the manufacturers continue their comprehensive analysis of these incidents, including the continuation of a test program being conducted by an independent third-party. This decision is tailored to address a specific population and, as described above, bears some relationship to a potential pattern of field ruptures that has emerged, i.e., three of the seven incidents involved MY 2015 – 2017 Chevy Traverse vehicles equipped with a specific inflator model produced during the production range. ARC continues to work with GM to evaluate the data collected and any next steps. We will continue to be transparent with the Agency as the parties’ investigation progresses.

V. Conclusion

ARC remains fully committed to continuing to work with NHTSA, the vehicle manufacturers, and Tier 1 suppliers to evaluate these ruptures and, more broadly, any concerns regarding ARC’s inflator products. ARC would be pleased to meet with the Agency to further discuss the rupture incidents cited in the Agency’s Recall Request Letter and this response.

Sincerely,

A handwritten signature in black ink, appearing to read 'Steve Gold', with a stylized flourish extending to the right.

Steve Gold
Vice-President – Product Integrity
ARC Automotive, Inc.

cc: Sharon Yukevich (NHTSA ODI) (via email)

Exhibit C

**UNITED STATES DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION**
1200 New Jersey Avenue SE
Washington, DC 20590

In re:)
)
EA16-003)
Air Bag Inflator Rupture)
)

SPECIAL ORDER DIRECTED TO ARC AUTOMOTIVE, INC.

To:
Mr. Steve Gold
Vice President – Product Integrity
ARC Automotive, Inc.
1729 Midpark Road, Suite 100
Knoxville, TN 37921
steve.gold@arcautomotive.com

This Special Order is issued by the National Highway Traffic Safety Administration (NHTSA), an Operating Administration of the United States Department of Transportation, pursuant to 49 U.S.C. § 30166(g)(1)(A) and 49 C.F.R. §§ 510.7-510.8.¹

On July 13, 2015, the Office of Defects Investigation (ODI) opened a Preliminary Evaluation (PE15-027) to investigate certain air bag inflators designed by ARC Automotive, Inc. (ARC). NHTSA opened its defect investigation after learning of two driver air bag inflator field ruptures involving ARC designed inflators. On August 4, 2016, NHTSA upgraded the defect investigation to an Engineering Analysis (EA16-003) to further investigate allegations of inflator ruptures involving ARC driver air bag inflators, after learning of an ARC inflator field rupture in Canada that resulted in a fatality. The investigation scope was subsequently expanded when NHTSA learned of frontal passenger air bag inflator ruptures in testing. Since the opening of

¹ See 49 C.F.R. §§ 1.95, 501.8(d)(3) (delegations of authority).

EA16-003, the Agency has learned of multiple additional ARC inflator field ruptures involving the forceful propulsion of metal fragments into the passenger compartment.

On April 27, 2023, NHTSA sent a Recall Request letter to ARC, which tentatively concluded that a defect related to motor vehicle safety exists in the frontal driver and passenger air bag inflators under investigation and demanded that ARC issue a Part 573 Recall Report to address the safety defect. On May 11, 2023, ARC responded to the Recall Request letter by disagreeing with the Agency's tentative conclusion that a safety defect exists and refusing to issue a Part 573 Recall Report for the subject inflators.

NHTSA's defect investigation, EA16-003, examining the safety of the frontal driver and passenger air bag inflators manufactured by ARC, continues. To that end, NHTSA hereby requires that ARC file answers to questions under oath and produce certain documents.

ARC's response to this Special Order must be provided to NHTSA's Office of the Chief Counsel by June 14, 2023. The response should be sent to Ashley Simpson, Office of the Chief Counsel, at Ashley.Simpson@dot.gov or, for large submissions, through the DOT Secure Large File Transfer Solution system.

ARC's response must be signed under oath, *i.e.*, accompanied by a declaration, signed by a responsible officer of ARC, stating that he/she has undertaken and directed an inquiry reasonably calculated to assure that the answers and production of documents are complete and correct, that he/she has caused the documents of ARC to be searched diligently for information and documents responsive to this Special Order and produced them to NHTSA, and that the answers to the inquiries provided to NHTSA respond completely and correctly to this Special Order. 28 U.S.C. § 1746; 49 U.S.C. § 30166(g)(1)(A); 49 C.F.R. § 510.7.

Failure to respond fully or truthfully to this Special Order may result in a referral to the United States Department of Justice for a civil action to compel responses and may subject ARC to civil penalties of up to \$26,315 per day, up to a maximum penalty of \$131,564,183 for a related series of daily violations. 49 U.S.C. §§ 30163(a)(1), 30165(a)(3); 49 C.F.R. § 578.6(a)(3). Falsifying or withholding information in response to this Special Order may also lead to criminal penalties of a fine or imprisonment of up to 15 years, or both. 49 U.S.C. § 30170(a)(1).

DEFINITIONS

Unless otherwise stated in the text, the following definitions apply to the information request set forth below:

- **ARC**: “ARC” or “you” means ARC Automotive, Inc., all other aliases, and all of its/their past and present officers and employees, and representatives that have safety-related information, whether assigned to its/their principal offices or any of its/their field or other locations, including all of its/their divisions, subsidiaries (whether or not incorporated), licensees, and affiliated enterprises and all of their headquarters, regional, zone, and other offices and their employees, and all agents, contractors (*e.g.*, test facilities that conduct compliance tests), consultants, attorneys and law firms, and other persons engaged directly or indirectly (*e.g.*, employee of a consultant) by or under the control of ARC Automotive, Inc. (including all business units and persons previously referred to), who are or were involved in any way with any of the following related to air bag inflators and/or automated borescope:
 - a) design, analysis, modification, or production;
 - b) testing, assessment, or evaluation;
 - c) sales of ARC Automotive, Inc. inflators; or
 - d) consideration or recognition of potential or actual defects, reporting, record-keeping and information management, analysis, claims or lawsuits, mediations, or arbitrations.
- **Document**: “Document(s)” is used in the broadest sense of the word and shall mean all original written, printed, typed, recorded, or graphic matter whatsoever, however produced or reproduced, of every kind, nature, and description, and all non-identical copies of both sides thereof, including, but not limited to, papers, letters, memoranda, correspondence, communications, electronic mail (e-mail) messages (existing in hard copy and/or in electronic storage), faxes, mailgrams, telegrams, cables, telex messages, notes, annotations, working papers, drafts, minutes, records, audio and video recordings, data, databases, other information bases, summaries, charts, tables, graphics, other visual displays, photographs, statements, interviews, opinions, reports, newspaper articles, studies, analyses, evaluations, interpretations, contracts, agreements, jottings, agendas,

bulletins, notices, announcements, instructions, blueprints, drawings, as-builts, changes, manuals, publications, work schedules, journals, statistical data, desk, portable and computer calendars, appointment books, diaries, travel reports, lists, tabulations, computer printouts, data processing program libraries, data processing inputs and outputs, microfilms, microfiches, statements for services, resolutions, financial statements, governmental records, business records, personnel records, work orders, documents generated through litigation, arbitration, or mediation, pleadings, mediation statements, discovery in any form, affidavits, motions, responses to discovery, all transcripts, administrative filings and all mechanical, magnetic, photographic and electronic records or recordings of any kind, including any storage media associated with computers, including, but not limited to, information on hard drives, floppy disks, backup tapes, and zip drives, electronic communications, including but not limited to, the Internet and shall include any drafts or revisions pertaining to any of the foregoing, all other things similar to any of the foregoing, however denominated by ARC Automotive, Inc., any other data compilations from which information can be obtained, translated if necessary, into a usable form and any other documents. For purposes of this request, any document which contains any note, comment, addition, deletion, insertion, annotation, or otherwise comprises a non-identical copy of another document shall be treated as a separate document subject to production. In all cases where original and any non-identical copies are not available, “document(s)” also means any identical copies of the original and all non-identical copies thereof. Any document, record, graph, chart, film or photograph originally produced in color must be provided in color. Furnish all documents whether verified by ARC Automotive, Inc. or not. If a document is not in the English language, provide both the original document and an English translation of the document.

- **Employee**: “Employee” means a person who works in the service of another person (the employer) under an express or implied contract of hire, under which the employee has the right to control the details of work performance.
- **Field deployment**: “Field deployment” means an event occurring after an inflator has been incorporated into a motor vehicle and said vehicle has left possession and control of its OEM in which the air bag inflator is activated and causes or attempts to cause the air bag to inflate.
- **Field rupture**: “Field rupture” refers to an incident during a field deployment (or alleged incident), whether in the United State or abroad, in which some mechanism (*e.g.*, excessive internal pressure inside the inflator) causes the inflator body to burst or break apart at any time.
- **Subject inflators**: “Subject inflators” means hybrid, toroidal inflators that ARC manufactured for incorporation into driver and passenger frontal air bag modules.
- **Subject inflators produced**: “Subject inflators produced” refers to finished inflators that passed all inspections, testing, and other quality assurance processes and are considered ready to be sold, used, or installed.

- **Subject inflators rejected:** “Subject inflators rejected” refers to produced inflators that failed to pass one or more of inspections, testing, and other quality assurance processes and are considered not suitable for sale, use or installation.

INSTRUCTIONS

Please follow the instructions below when providing responses to the numbered information requests in the next section.

1. Your response to the Special Order shall be sent to the Office of the Chief Counsel (NCC-100), National Highway Traffic Safety Administration by email to Ashley Simpson at Ashley.Simpson@dot.gov or through the DOT Secure Large File Transfer Solution system.²
2. Please repeat the applicable request verbatim above your response. After your response to each request, identify the source of the information and indicate the last date the information was gathered.
3. When documents are produced and the documents would not, standing alone, be self-explanatory, the production of documents shall be supplemented and accompanied by explanation. Please also be reminded that where a document responsive to a request is not in the English language, both the original document and an English translation of the document must be produced.
4. You are required to respond to every request listed in this Special Order. If you cannot respond to any specific request or subpart(s) thereof, please state the reason why you are unable to do so. If you are unable to respond because you do not have all or any of the precise information needed to respond, provide an estimate.

² In order to use the File Transfer System, please email Ashley.Simpson@dot.gov for a link.

5. After your response to each request, state whether you previously had any responsive documents that are no longer within your possession, custody, or control, including but not limited to because the documents were lost or destroyed. If such documents ever existed: describe the documents; identify the reason that the documents are no longer in your possession, custody, or control; identify the date you last had the documents; and identify who may have copies of such documents.

6. NHTSA requests that you not seek confidential treatment for your narrative responses to these Requests and intends to make your narrative responses public. *See Food Marketing Inst. v. Argus Leader Media*, 139 S. Ct. 2356, 2363 (2019).

7. If you claim that any of the information or documents provided in response to this Special Order constitutes confidential commercial material within the meaning of 5 U.S.C. § 552(b)(4) or is protected from disclosure pursuant to 18 U.S.C. § 1905, you must submit supporting information together with the materials that are the subject of the confidentiality request, in accordance with 49 C.F.R. Part 512, to the Office of the Chief Counsel (NCC-100), National Highway Traffic Safety Administration as instructed below. By accepting confidentiality requests related to the information or documents provided in response to this Special Order, NHTSA does not expressly or impliedly promise confidential treatment of such information or documents. *See Food Marketing Inst. v. Argus Leader Media*, S. Ct. 2356, 2363 (2019).

8. NHTSA is treating electronic submission as an acceptable method for submitting confidential business information (CBI) to the agency under 49 C.F.R. Part 512.4. Since Part 512 submissions are handled by NHTSA's Office of the Chief Counsel, any Part 512 submission should be sent to the Office of the Chief Counsel electronically. Specifically, any CBI

submissions sent via email should be sent to Ashley Simpson at Ashley.Simpson@dot.gov. For CBI submissions via a secure file transfer application, Ashley Simpson (Ashley.Simpson@dot.gov) must be notified when files are submitted and have access to retrieve the submitted files. Please refer to EA16-003 in your response to this letter and in the subject line of any confidentiality request submitted to the Office of the Chief Counsel.

At this time, submitters should not send a duplicate hardcopy of their electronic CBI submissions to DOT headquarters. Please note that these modified submission procedures are only to facilitate continued operations while maintaining appropriate social distancing due to COVID-19. Regular procedures for Part 512 submissions will resume upon further notice, when NHTSA and regulated entities discontinue operating primarily in telework status.

For questions about CBI issues, including these modified submission procedures, please contact Dan Rabinovitz in the Office of Chief Counsel at Daniel.Rabinovitz@dot.gov or 202-366-8534.

9. All documents shall be produced electronically, as described below, in a common format (e.g., Word, PDF, Microsoft Access) or other electronic formats commonly used by ARC and discernable to NHTSA.

- a. Hard copy documents shall be imaged in PDF format. They shall be provided as multi-page PDFs with document level optical character recognition (OCR).
- b. Electronically Stored Information (ESI) shall be converted to multi-page PDFs and produced along with document level OCR/extracted text.
- c. You shall organize the documents as instructed in the request to which it responds or, if no instruction is given in a request, in chronological order by project, report, or other similar categorization responsive to that numbered request.

- d. After the documents are so organized, and in sequential order to the request to which each response, you shall apply Bates Numbers to the entire production.
- e. You shall produce an index that lists the title of each document produced, the Bates Numbers on the document, and the request to which it corresponds.

10. When a request calls for a detailed, narrative response, do not identify business records or other documents in lieu of providing a written narrative. A response to a request for a written narrative that solely directs NHTSA to documents will be considered non-responsive and may result in civil penalties. 49 U.S.C. §§ 30163(a)(1), 30165(a)(3); 49 C.F.R. § 578.6(a)(3). A response to a request for a detailed, narrative response that includes references to specific Bates Number(s) in addition to a written narrative will not be considered a violation of this Instruction.

11. The singular includes the plural; the plural includes the singular. The masculine gender includes the feminine and neuter genders; and the neuter gender includes the masculine and feminine genders. “And” as well as “or” shall be construed either disjunctively or conjunctively, to bring within the scope of this Special Order all responses that might otherwise be construed to be outside its scope. “Each” shall be construed to include “every” and “every” shall be construed to include “each.” “Any” shall be construed to include “all,” and “all” shall be construed to include “any.” The use of a verb in any tense shall be construed as the use of the verb in a past or present tense, whenever necessary to bring within the scope of the document requests all responses which might otherwise be construed to be outside its scope.

12. ARC’s response to this Special Order must be under oath, i.e., accompanied by an declaration, signed by a responsible officer of ARC, stating that he/she has undertaken and directed an inquiry reasonably calculated to assure that the answers and production of documents are complete and correct, that he/she has caused the documents of ARC to be searched diligently

for information and documents responsive to this Special Order and produced them to NHTSA, and that the answers to the inquiries provided to NHTSA respond completely and correctly to this Special Order.

13. The requests in this Special Order are deemed to be continuing in nature so as to require additional or amended responses from you should you obtain or become aware of any new, additional, or differing responsive information or documents.

REQUESTS

1. State whether ARC contends that air bag inflators are expected to occasionally experience a field rupture. If yes, state the frequency of field ruptures ARC considers to be expected and explain how ARC arrived at this frequency.

2. Did ARC notify any of its customers that its inflators are expected to occasionally experience field ruptures? If yes, identify each customer that received such a notification and describe the timing, contents, and other circumstances of the notification. If no, explain why no such notification was made.

3. In developing ARC's inflator design and manufacturing process for the subject inflators, state the frequency of field ruptures of the subject inflators ARC anticipated occurring as "random 'one-off' anomalies."³ Explain how ARC arrived at this frequency.

4. State the frequency of field ruptures of the subject inflators ARC believes would evidence something more than "random 'one-off' manufacturing anomalies." Explain how ARC arrived at this frequency.

³ See ARC's May 11, 2023 response to NHTSA's Recall Request letter, page 2.

5. State ARC's best estimate of the number of additional field ruptures of the subject inflators it believes will occur and provide an explanation of the methodology for that estimate. If ARC contends that no additional field ruptures of the subject inflators will occur, describe the basis for that contention.

6. Provide ARC's best estimate of the number of field deployments of the subject inflators that have occurred in the United States.

7. Provide a detailed narrative describing ARC's implementation of the borescope⁴ into ARC's manufacturing process. This narrative should include, but is not limited to, describing (1) the borescope's criteria for acceptance/rejection of a subject inflator and why ARC decided to use those criteria, (2) ARC's desired outcome of the implementation, and (3) ARC's assessment of the actual outcome of the implementation.

8. Beginning in 2000 and for each year after, including the current year (2023), list the number of subject inflators rejected due to weld flash.⁵

9. State the name and title of the ARC employee responsible for approving the decision to implement the automated borescope.⁶

10. Provide a copy of the licensing agreement ARC and Delphi entered into on or around July 17, 2001.

11. Explain whether the licensing agreement requested in Request 10, above, allowed or required Delphi to use ARC's inflator design(s), manufacturing process(es), or both. Describe

⁴ See *id.*, page 7.


⁵ See *id.*, page 10.

⁶ See *id.*, footnote 2.

in detail any discretion the licensing agreement gave Delphi related to ARC's inflator design(s) and manufacturing process(es).

Dated: May 31, 2023

ANN
ELIZABETH
CARLSON


Date: 2023.05.31
15:09:16 -04'00'

Ann Carlson
Chief Counsel

Exhibit D

**UNITED STATES DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION**

Office of the Chief Counsel (NCC-100)
1200 New Jersey Avenue, SE
Washington, DC 20590

In re:)
EA16-003)
Air Bag Inflator Rupture)
)
)
)

ARC AUTOMOTIVE, INC.'S
WRITTEN RESPONSE TO MAY 31, 2023 SPECIAL ORDER

PRELIMINARY STATEMENT

On May 31, 2023, the Chief Counsel of the National Highway Traffic Safety Administration (NHTSA or Agency) issued a Special Order directed to ARC Automotive, Inc. (ARC) as part of the Agency's continuing investigation related to inflator ruptures (EA 16-003).

On July 13, 2015, NHTSA opened a preliminary evaluation (PE 15-027) related to ARC's compact, driver-side air bag inflator (CADH) based on two reports of ruptures in the field. On August 4, 2016, the Agency upgraded the investigation to an engineering analysis, following a reported rupture in Canada of a CADH inflator. During the course of NHTSA's engineering analysis, the Agency has expanded its investigation beyond CADH inflators. The Agency has issued two Standing General Orders (SGO 2016-01 and SGO 2017-01) seeking information concerning inflator ruptures during internal or customer quality testing. Additionally, the Agency has issued five information requests to ARC (as well as multiple information requests to Tier 1 suppliers of air bag modules and vehicle manufacturers) and two other special orders. In addition to these formal requests for information, ARC has participated in multiple meetings and briefings

with NHTSA, ARC's Tier 1 customers, and vehicle manufacturers to discuss reported field issues, root cause analyses, tests of parts collected from the field, and the activities of a joint task force (which included NHTSA).

With respect to field ruptures, NHTSA issued standing general orders that require vehicle manufacturers, airbag module suppliers, and inflator suppliers to report to the Agency, on an ongoing basis, alleged field incidents that may involve an inflator rupture. In this regard, Standing General Order 2015-02A (SGO 2015-02A) requires ARC to submit to NHTSA reports regarding alleged incidents that may involve ARC inflators. On February 17, 2019, following a recall of an inflator lot that had included an inflator involved in an alleged field rupture in Pennsylvania (Recall No. 19V019), NHTSA held a meeting at its headquarters in Washington, DC, where NHTSA agreed that a recall of inflators from the same lot as an inflator that ruptured in the field was an appropriate response. Following this incident, vehicle manufacturers that received reports of alleged failures likewise recalled the corresponding inflator lots after the vehicle manufacturers had an opportunity to inspect the vehicles involved in a rupture incident.

On March 28, 2023, ARC received notice of an alleged inflator rupture in Michigan. On April 25, 2023, ARC and NHTSA attended a visual inspection and confirmed that ARC manufactured the inflator at issue. That same day, NHTSA notified ARC that the Agency had scheduled a Multidisciplinary Review Panel for the following day in which NHTSA's Office of Defects Investigation (ODI) would recommend that the Agency issue a recall request letter (RRL) to ARC covering the entire population of driver and passenger toroidal inflators from start of production (SOP) through January 2018. The Agency's position represented an extraordinary and surprising departure from its prior acceptance of lot-specific recalls to address these rare field events. Indeed, the RRL was the first time during the eight-year history of this investigation that

the Agency requested that such a broad recall be conducted. No Agency representative had previously even suggested to ARC (or, ARC believes, to any other manufacturer involved in the investigation) that the entire population should be subject to recall.

Despite the collaborative and cooperative nature of this investigation, NHTSA declined to meet with ARC to discuss the basis of the Agency's tentative conclusion or to seek ARC's views on the matter before ODI recommended the issuance of a recall request letter. On April 26, 2023, the Multidisciplinary Review Panel concurred with ODI's recommendation, and on April 27, 2023, NHTSA issued a recall request letter to ARC. ARC responded to the RRL on May 11, 2023.

In furtherance of its investigation, NHTSA issued its May 31, 2023 Special Order. The Special Order contains 11 separate requests, some of which require searches through large volumes of documents and multiple data systems across a number of ARC's departments. Given the short (14-day) period of time provided to respond to the Special Order, ARC has directed inquiries in good faith in a manner that is reasonably calculated to assure that answers and the production of documents are complete and correct (subject to ARC's comments below). In conducting these inquiries, ARC directed personnel in relevant divisions to search for potentially responsive materials. The scope of ARC's search for responsive materials focused on personnel and data systems where potentially responsive information was most likely to be found and to which ARC would ordinarily refer.

COMMENTS REGARDING DEFINITIONS AND INSTRUCTIONS

ARC maintains the following understanding of NHTSA's May 31, 2023 Special Order definitions and instructions:

1. ARC notes the definition of "ARC" set forth in Definition No. 1 is unduly burdensome to the extent it encompasses "all of [ARC's] past and present officers and employees,

and representatives . . . whether assigned to its/their principal offices or any of its/their field or other locations . . .” ARC has undertaken reasonable and diligent steps to investigate the topics of these requests, focusing on personnel and data systems where potentially responsive information was most likely to be found and to which ARC would ordinarily refer. In responding to this request, ARC has not contacted *former* officers and employees.

2. ARC notes that in accordance with Instruction No. 6, NHTSA intends to make narrative responses public. Therefore, those portions of ARC’s response that constitute “trade secrets and commercial or financial information obtained from a person [that is] privileged or confidential” for which ARC seeks confidential treatment in accordance with 49 C.F.R. Part 512 are contained in separate exhibits.

3. ARC notes Instruction No. 13 appears to seek to create an ongoing and indefinite duty to amend or supplement responses if ARC obtains or becomes aware of “any new, additional, or differing responsive information or documents.” The phrase “new, additional, or differing” is vague and ambiguous, and it does not provide meaningful notice as to what type of information or documents rise to the level of requiring supplementation. Read literally, this Instruction creates a perpetual, open-ended request to update data, some of which could periodically change. Accordingly, ARC interprets this instruction to require amendment consistent with the requirements of Fed. R. Civ. P. 26€. Further, to the extent that NHTSA later requests additional data or information with specificity, ARC will respond accordingly, as it has throughout the course of NHTSA’s investigation.

RESPONSES TO REQUESTS

Responses to the Agency’s requests are set forth below. As requested, after each numeric designation, ARC has set forth verbatim the request for information, followed by our response.

Unless otherwise stated, ARC has undertaken to provide responsive information dated up to and including June 14, 2023.

1. *State whether ARC contends that air bag inflators are expected to occasionally experience a field rupture. If yes, state the frequency of field ruptures ARC considers to be expected and explain how ARC arrived at this frequency.*

Response: ARC interprets the term “air bag inflators” (as used in this Request No. 1) as referring to air bag inflators designed or manufactured *by any entity* for use in motor vehicles. However, ARC does not have a basis to assess expectations with respect to air bag inflators that ARC does not manufacture, the likelihood of non-ARC inflators to rupture in the field, or the potential frequency of non-ARC inflators to rupture.

With respect to ARC’s inflators specifically, ARC designs its inflators, manufacturing processes, and quality controls to operate within the manufacturing and performance parameters specified by its customers. Vehicle and equipment manufacturers seek to minimize the risk of failure due to flaws in design, construction (including occasional human error on the production line) or inspection processes, including flaws that could result in the rupture of an airbag inflator. ARC did not design and manufacture its inflators with an expectation that some would occasionally experience a field rupture. ARC recognizes, however, that even with appropriate industry standards (see Advanced Product Quality Process (APQP) discussion in ARC’s response to Request No. 2) and efforts by manufacturers to minimize the risks of failures, the manufacturing processes may not completely eliminate the risk of occasional or isolated failures. In this regard, the Safety Act does not require vehicles and equipment to *never* experience a failure in the field. Rather, the Safety Act seeks to protect the public against *unreasonable* risks. *See* 49 U.S.C. § 30102(a)(3), (a)(9); *see also United States v. Gen. Motors Corp.*, 561 F.2d 923, 929 (D.C. Cir. 1977) (Leventhal, J., dissenting in part) (emphasis added), *cert. denied*, 434 U.S. 1033 (1978).¹

2. *Did ARC notify any of its customers that its inflators are expected to occasionally experience field ruptures? If yes, identify each customer that received such a notification and*

¹ As Judge Leventhal aptly stated, “Out of any manufacturing process, some products are bound to be ‘lemons.’ These failures may be due to flaws in the design, construction (including occasional human error on the production line) or inspection process. When the defects are occasional or isolated, the risk associated with them is part of the ordinary danger of operating an automobile . . .” 561 F.2d at 929.

describe the timing, contents, and other circumstances of the notification. If no, explain why no such notification was made.

Response: ARC did not design and manufacture its inflators with an expectation that some would occasionally experience field ruptures and, therefore, ARC did not issue any notification to customers of such expectation, apart from the information provided to customers throughout the APQP (discussed below). During the eight-year investigation, ARC's customers, the vehicle manufacturers, and NHTSA have been informed that there have been unexplained field ruptures, and, as the case law recognizes and all manufacturers are aware, the risk of manufacturing anomalies cannot be completely ruled out in any mass production process.

Regarding when and how in the design and manufacturing process customers would receive information regarding risks of failure and the types of information provided to customers, ARC, its Tier 1 customers, and the vehicle manufacturers participate in an APQP for design and production validation that includes a Design Failure Mode and Effects Analysis (DFMEA) and evaluation. The specifications and quality requirements that ARC must meet are defined by its Tier 1 supplier customers and the vehicle manufacturers (through the Tier 1 suppliers). The DFMEA evaluates, at the design level, potential failure modes (such as over pressurization) and possible effects (such as ruptures). The design and production validation process also includes a Process Failure Mode and Effects Analysis (PFMEA), which evaluates each process step. The DFMEA and PFMEA identify the Risk Priority Number (RPN). The RPN assesses the severity, occurrence, and detection of design and process failures. The RPN calculation is defined by standard industry parameters and is calculated by ARC using these parameters. To minimize the potential for manufacturing errors that could lead to failure and other risks identified in the RPN, ARC creates a Control Plan, which is shared with each of its Tier 1 supplier customers as part of the Inflator Production Part Approval Process (PPAP) for each new inflator model.

Before approving parts for production, the Tier 1 suppliers and vehicle manufacturers may review or audit the DFMEA and PFMEA evaluations and analyses, the justifications of the RPN values ARC assigned for each part, and the Control Plans to determine an acceptable RPN for each individual part the Tier 1 suppliers and vehicle manufacturers consider for purchase. Based on this information, each customer determines whether the RPN meets its requirements for production parts. The Tier 1 suppliers' and vehicle manufacturers' option to review these documents, evaluations, and justifications are not limited to the PPAP review; Tier 1 suppliers and vehicle manufacturers may further audit this information after the start of production.

The PPAP process is an industry standard approval process that, among other things, includes a standardized process for identifying, evaluating, and mitigating potential risks in mass-manufacturing vehicle components. For ARC's inflators, the DFMEA, PFMEA, RPN, and Control Plan outlined potential risks of failures, including a rupture. ARC views this analysis as identifying potential risks of failures, but it does not quantify the probability of field failures.

ARC provided the Control Plan for individual parts to the customers identified in the file "CONF BUS INFO – Response to Req. No. 2, Customer List." This confidential file has been submitted to NHTSA in a request for confidential treatment in accordance with 49 C.F.R. Part 512.

With respect to ruptures that occur during ARC quality and similar testing, ARC's practice is to notify the Tier 1 supplier of a rupture. Likewise, if a rupture occurs during the Tier 1 supplier's testing, the supplier notifies ARC of such a rupture. ARC and the Tier 1 supplier then work together to analyze the potential root cause(s) of the rupture and, if determined necessary through this collaborative process, take corrective action(s). For field ruptures, ARC works with the relevant Tier 1 customer and vehicle manufacturer to evaluate the potential root cause(s) of the incident. ARC's investigation includes standard methodologies for determining the root cause(s) of a failure, such as the Eight Disciplines Methodology (8D) and similar engineering methods. ARC shares its root cause analyses, which provide additional information for Tier 1 suppliers and vehicle manufacturers to evaluate the potential risks of future failures, to the involved Tier 1 suppliers and vehicle manufacturers.

3. *In developing ARC's inflator design and manufacturing process for the subject inflators, state the frequency of field ruptures of the subject inflators ARC anticipated occurring as "random 'one-off' anomalies." Explain how ARC arrived at this frequency.*

Response: In designing and manufacturing the subject inflators, ARC did not calculate or estimate a frequency of field ruptures that ARC anticipated could occur due to "random 'one-off' anomalies." As described in detail in above, ARC utilizes the industry standard APQP. That process utilizes DFMEA and PFMEA analyses and evaluations to identify potential failures by identifying RPNs. ARC's inflator design and manufacturing process includes the development of a Control Plan and solutions for minimizing RPNs identified during the APQP and the DFMEA and PFMEA analyses and evaluations.

In accordance with the industry standard, the component design, manufacturing control, and processes cannot be developed in anticipation of "random, one-off" manufacturing anomalies that were not (and have not) been identified during the development process.

4. *State the frequency of field ruptures of the subject inflators ARC believes would evidence something more than "random 'one-off' manufacturing anomalies." Explain how ARC arrived at this frequency.*

Response: ARC takes any field rupture of an inflator seriously and has dedicated significant resources investigating these incidents with NHTSA, as well as with its Tier 1 and vehicle manufacturer customers. This request asks ARC to speculate regarding potential future events without all of the information that would be necessary to conduct a proper evaluation.

As NHTSA has acknowledged, under the Safety Act, determining the number of failures that indicates a potential field issue across a population would require "a fact-specific inquiry that

includes considerations such as: the failure rate of the component in question; the failure rates of comparable components; the importance of the component to the safe operation of the vehicle; and the severity of harm to the vehicle and/or occupant caused by the failure.” *NHTSA Enforcement Guidance Bulletin 2016-02: Safety-Related Defects and Automated Safety Technologies*, 81 Fed. Reg. 65705, 65708 (Sep. 23, 2016) (internal citations omitted) (citing *United States v. Gen. Motors Corp.*, 518 F.2d 420, 427 (D.C. Cir. 1975) (“*Wheels*”). Thus, in order to answer NHTSA’s hypothetical question, ARC would need the following additional information: the production date(s) or lot(s) of the inflators involved, the number of deployments during a specified/relevant time period, the total population of parts, the specific manufacturing plant(s) and line(s) where the parts were produced, potential root cause(s) (including whether there are common root causes among the failures), as well as a variety of other information that may be relevant to determining whether an issue is systemic or isolated (e.g., manufacturing data for the production period, the manufacturing personnel on the respective manufacturing line, the subcomponents and raw materials, the design of the air bag module in which the inflator was installed, integration of the inflator to a module and vehicle, and the vehicle make and model).

5. *State ARC’s best estimate of the number of additional field ruptures of the subject inflators it believes will occur and provide an explanation of the methodology for that estimate. If ARC contends that no additional field ruptures of the subject inflators will occur, describe the basis for that contention.*

Response: ARC understands this request as seeking an estimate of additional field ruptures for both CADH and PH7 inflators produced from the start of production through implementation of ARC’s automated borescope check. ARC does not currently have complete data from which to derive an evidence-based estimate of the number of additional field ruptures, if any, that may occur.

ARC uses reliability calculations to demonstrate its confidence that inflators will deploy without a failure. The reliability analysis is an attribute test-type assessment that assumes a binomial distribution of the results: pass (no rupture) or fail (rupture).

As ARC explained in its February response to NHTSA’s December 13, 2022 Information Request (IR) related to CADH deployment data, to fully assess the reliability of its inflators, the following inputs would be necessary to calculate the respective reliability for the CADH and PH7 inflators:

Total # of Ruptures & Total # of Deployments

For the Total Number of Ruptures, the inputs are as follows:

$$\begin{aligned}
 & \textit{Total \# of Ruptures} \\
 &= \textit{\# of Deployment Ruptures at ARC} \\
 &+ \textit{\# of Deployment Ruptures at Tier 1} \\
 &+ \textit{\# of Deployment Ruptures at OEM} \\
 &+ \textit{\# of Deployment Ruptures in the Field}
 \end{aligned}$$

For the Total Number of Deployments, the inputs are as follows:

$$\begin{aligned}
 & \textit{Total \# of Deployments} \\
 &= \textit{\# of Deployments at ARC} \\
 &+ \textit{\# of Deployments at Tier 1} \\
 &+ \textit{\# of Deployments at OEM} \\
 &+ \textit{\# of Deployments in the Field}
 \end{aligned}$$

With these inputs, ARC could calculate the reliability of the inflators as follows:

$$\begin{aligned}
 & \textit{Reliability} \\
 &= f(\textit{Total \# of Failures}, \textit{Total \# of Deployments}) \textit{ at} \\
 & \quad \textit{selected Confidence Level}
 \end{aligned}$$

A confidence and reliability calculation does not, by itself, forecast future failures; it is a tool for objectively understanding the currently available information. The reliability percentage provides an estimated probability that an inflator will successfully deploy. The confidence interval can be used to estimate the likely range of these probabilities.

As noted, ARC does not currently have a full set of the data inputs necessary to make the reliability calculation. NHTSA requested *a portion* of this information from the vehicle manufacturers and Tier 1 suppliers in two sets of information requests.² ARC requested that the Agency share the data with these inputs. However, NHTSA has declined to share any of the information due to confidentiality restrictions and, as far as ARC is aware, NHTSA has not requested permission from the respective manufacturers to share this information with ARC at this time. Some of the Tier 1 suppliers and vehicle manufacturers have shared with ARC the deployment information they submitted to NHTSA. The information ARC has received at this time does not include deployment information for the full production period covered by NHTSA's RRL (i.e., start of production through January 2018). ARC's response to Request No. 6 details the information that would be necessary for ARC to make a reasonable estimate of the total number of field deployments.

Because ARC does not have the data needed to calculate reliability and confidence percentages, it cannot provide a reasonable estimate of the number of additional field ruptures, if any, that may occur.

² These information requests, issued to Tier 1 suppliers and vehicle manufacturers, requested estimates of deployment data covering internal testing as well as the vehicle manufacturer's estimates of field deployments. The information requests requested Tier 1 suppliers and vehicle manufacturers provide a range of potential deployments using high and low estimates.

6. *Provide ARC's best estimate of the number of field deployments of the subject inflators that have occurred in the United States.*

Response: ARC interprets this request as seeking an estimate of field deployments for both CADH and PH7 inflators produced from the start of production through implementation of ARC's automated borescope check.

To derive a proper estimate of U.S. field deployments, ARC would need (at a minimum) field deployment data from each vehicle manufacturer for the entire production range of inflators manufactured prior to ARC implementing the borescope (approximately 2001 - 2018). This data originates from the vehicle manufacturers; as a Tier 2 supplier, ARC does not have access to the complete data set. As discussed in ARC's response to Request No. 5, NHTSA requested *a portion* of the relevant information (*i.e.*, 2010 - 2018) from the vehicle manufacturers in information requests issued to these manufacturers in December 2022. Our understanding is that the Agency requested this information to allow the Agency and the manufacturers to conduct a risk analysis and to identify potential risk subpopulations for a possible field recovery effort. It appears that the Agency has abandoned this objective, evidence-based approach, as it issued its RRL without proceeding with this activity and its RRL was completely silent regarding the number of field deployments and failure rates based thereon.

In response to information requests NHTSA issued to vehicle manufacturers in December 2022, ARC understands the Agency received estimates of field deployments in the U.S. from those manufacturers in or around February 2023. ARC requested that Agency staff provide this data (which could be anonymized) to ARC so that an appropriate evaluation could be performed, but the Agency declined this request due to confidentiality restrictions.³ As a consequence, ARC has been forced to request this data from each of the manufacturers.

As of the date of this response, ARC has received data from six vehicle manufacturers, which included separate estimates for driver-side inflators (CADH) and for passenger-side inflators (PH7). ARC has not been able to determine whether the various subpopulations covered by the manufacturers' responses (none of which cover the pre-2010 time period) are representative of the full production period at issue (2000 – January 2018).

Using the information that ARC has received from vehicle manufacturers to date, ARC aggregated the estimates from the respective vehicle manufacturers and calculated field deployment totals for CADH inflators and PH7 inflators as follows, with a range from low to high:⁴

- 185,424 and 200,038 field deployments of CADH inflators in the U.S. for the subpopulation
- 6,822 and 85,609 field deployments of PH7 inflators in the U.S. for the subpopulation

³ ARC renews its request that NHTSA share this data.

⁴ The vehicle manufacturers provided their methodology for determining the field deployments in responses to NHTSA's information requests. ARC understands that the methodologies and data used to determine the estimates are not necessarily the same for each vehicle manufacturer.

These totals represent a subset of the total number of field deployments for the full production range. Because the vehicle manufacturers use different methodologies for estimating field deployments, ARC cannot use this data to reasonably estimate the total number of field deployments.

7. *Provide a detailed narrative describing ARC's implementation of the borescope into ARC's manufacturing process. This narrative should include, but is not limited to, describing (1) the borescope's criteria for acceptance/rejection of a subject inflator and why ARC decided to use those criteria, (2) ARC's desired outcome of the implementation, and (3) ARC's assessment of the actual outcome of the implementation.*

Response: As explained in ARC's response to the RRL:

In May 2017, at ODI's request, a group of vehicle manufacturers, Tier 1 suppliers, a third-party friction welding consultant, ARC, and NHTSA formed the Collaboration Team (also referred to as the ARC Joint Task Force) to investigate ruptures that occurred during certain quality tests of *passenger-side* inflators as early as January 2017. The Collaboration Team, led by a Tier 1 supplier, included several Tier 1 suppliers and vehicle manufacturers, as well as NHTSA and Transport Canada, to investigate the root cause of LAT [(lot acceptance test)] failures that resulted in over pressurization.

All members of the Collaboration Team, including NHTSA, had access to the confidential design and investigation information reviewed and the analyses generated by this team. The Collaboration Team evaluated a possible root cause of the LAT failures: abnormal weld flash that, if loose and of a sufficient size during deployment, could potentially block the exit orifice of the inflator and result in a rupture. Under the direction of the Collaboration Team, ARC designed experiments that attempted to manufacture inflators that would form abnormal weld flash and result in a rupture. These experiments were unable to replicate the issue.

Although the possible root cause could not be replicated, the Collaboration Team recommended that ARC implement corrective actions in the form of changes to the weld schedules of the existing Inertia Friction Welding (IFW) friction welders and the implementation of an automated borescope inspection system for PH7 inflators. All members of the Collaboration Team, including NHTSA, agreed with the corrective actions.

In August 2017, ARC began implementing the borescope check on lines manufacturing PH7 inflators. Although CADH inflators were outside the scope of the Collaboration Team's evaluation, ARC agreed to implement an automated borescope inspection on all lines manufacturing toroidal inflators, including lines manufacturing CADH inflators.

The borescope process uses a camera system that visually inspects the orifice of the pressure vessel that measures criteria used to reject parts due to a risk of a blockage. The system counts the number of pixels in an inspection zone near the exit orifice of the inflator and rejects inflators that have a reading greater than threshold set value. The threshold set value is significantly lower than the value which might create a blockage. The system also rejects parts where it cannot find or match the position of the center support, cannot confirm the part is properly positioned for the inspection, or cannot verify the proper number of vents on the center support. These criteria are intended to confirm that the exit orifice is not obstructed or blocked with material that could potentially result in a rupture and that the center support has the proper number of vents. ARC is providing additional information in the file “CONF BUS INFO – Response to Req. No. 7, Borescope Narrative Supplement.” This confidential file has been submitted to NHTSA in a request for confidential treatment in accordance with 49 C.F.R. Part 512.

As discussed above, ARC has implemented this automated borescope inspection process for all lines manufacturing toroidal inflators. ARC is not aware of any field or LAT ruptures that may have involved a blockage of the exit orifice since implementing this inspection.

8. *Beginning in 2000 and for each year after, including the current year (2023), list the number of subject inflators rejected due to weld flash.*

Response: NHTSA’s request does not explain who or what is rejecting subject inflators “due to weld flash.”⁵ Because Request Nos. 7 and 9 request information related to ARC’s automated borescope inspection system, ARC interprets the phrase “rejected due to weld flash” as seeking annual totals of production inflators that the automated borescope inspection determined were outside the parameters of the inspection criteria described in Response to Request No. 7.⁶ As explained in its response to Request No. 7, the parameters of the borescope inspection use conservative criteria for estimating the placement and attributes of weld flash in the inflator’s center support near the exit orifice.

As the Agency is aware, ARC completed implementation of the borescope check across all manufacturing lines for the subject inflators in 2018. In its December 13, 2022 information request directed to ARC, NHTSA requested “rejection/acceptance” totals by the borescope inspection for each customer by month and year, along with detailed information about the inflators. NHTSA’s request defined the “Production Time Frame of Interest” for this data as January 1, 2018 through

⁵ Request No. 8 includes a footnote after the phrase “weld flash” that appears to cite page 10 of ARC’s Response to the RRL. Page 10 of ARC’s Response to NHTSA’s RRL does not include a reference to weld flash. Page 10 contains a discussion of the statutory and regulatory requirements for reporting safety-related defects and conducting recalls and does not include any discussion of the subject inflators, weld flash, or rejecting inflators.

⁶ Note, however, that ARC’s quality controls also include additional checks and processes that could potentially be related to weld flash, including a flash-dam pin inserted into the inflator’s center support to ensure that the flash was formed normally and outside of the orifice; and regular part inspections that include cross-sectioning a production inflator and inspection of the welds (which could include inspecting the weld flash). Parts could be removed based upon these inspections, but it may not be clear whether this was due to weld flash.

the date of the request. On February 28, 2023, ARC submitted responsive data to NHTSA through December 31, 2022.⁷

Because ARC began implementing the borescope check in August 2017, it does not have rejection totals for years prior to 2016. The attached file lists the calendar year and separately provides the total, cumulative number of CADH and PH7 inflators that did not meet the pixel count criteria and were therefore rejected by the borescope inspection, worldwide, from August 2017 through May 31, 2023.

ARC is providing rejection data in the file “CONF BUS INFO – Response to Req. No. 8, Borescope Data.” This confidential file has been submitted to NHTSA in a request for confidential treatment in accordance with 49 C.F.R. Part 512.

9. *State the name and title of the ARC employee responsible for approving the decision to implement the automated borescope.*

Response: The decision to develop and implement the automated borescope inspection system on ARC manufacturing lines was the result of a collaborative process with the Tier 1 suppliers, vehicle manufacturers, and NHTSA. As discussed in ARC’s Response to NHTSA’s RRL, the ARC Joint Task Force, also known as the Collaboration Team, reviewed and recommended the implementation of the automatic borescope inspection system. *See* ARC’s Response to the RRL at p. 7. The recommendation to implement the automatic borescope check involved more than one layer of review at ARC and included the receipt of approvals from the Tier 1 suppliers and vehicle manufacturers for ARC to make changes to the manufacturing process. The Chief Executive Officer of ARC Automotive, Inc., at that time, Michael Goodin, issued the final approval to implement the automatic borescope check.

10. *Provide a copy of the licensing agreement ARC and Delphi entered into on or around July 17, 2001.*

Response: ARC voluntarily provided to NHTSA a copy of the licensing agreement between ARC and Delphi in August 2015 with a confidential treatment request. ARC is providing the agreement again with this response in the file “CONF BUS INFO – Response to Req. No. 10, ARC-Delphi Inflator License Agreement.” This confidential file has been submitted to NHTSA in a request for confidential treatment in accordance with 49 C.F.R. Part 512.

⁷ Because some PH7 lines implemented the automated borescope inspection system starting in August 2017, ARC provided the relevant data for these lines starting from the date ARC implemented the borescope system for the respective manufacturing line.

11. *Explain whether the licensing agreement requested in Request 10, above, allowed or required Delphi to use ARC's inflator design(s), manufacturing process(es), or both. Describe in detail any discretion the licensing agreement gave Delphi related to ARC's inflator design(s) and manufacturing process(es).*

Response: ARC is providing its response to this request in the file "CONF BUS INFO – Response to Req. No. 11, ARC-Delphi Inflator License Agreement Narrative." This confidential file has been submitted to NHTSA in a request for confidential treatment in accordance with 49 C.F.R. Part 512.

* * *

Declaration

I, Stephen Gold, Vice President – Product Integrity of ARC Automotive, Inc., am authorized by ARC Automotive, Inc. to make this declaration on its behalf. The factual statements and substantive responses set forth above are based on one or more of the following: my review of company records kept and maintained in the ordinary course of business, discussions with knowledgeable individuals, and my own personal knowledge. As part of the company's efforts to respond to NHTSA's Special Order, ARC has taken diligent steps to locate and review information, documents, and data responsive to NHTSA's inquiries that are in the company's possession, custody, or control. Based on the above, the answers to the inquiries provided to NHTSA respond completely and correctly to this Special Order, subject to the company's comments provided in response. I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on June 14, 2023.

A black rectangular box redacting the signature of Stephen Gold.

**Stephen Gold
Vice-President – Product Integrity
ARC Automotive, Inc.**

Exhibit E

Current List of Class Vehicles

Defendant	Make	Model	Model Year
Audi	Audi	A3	2015-2020
Audi	Audi	S3	2015-2020
Audi	Audi	RS3	2017-2020
BMW	Mini Cooper	2 Door	2014-2017
BMW	Mini Cooper	4 Door	2015-2017
BMW	Mini Cooper	Convertible	2016-2017
BMW	BMW	i3	2014-2017
BMW	BMW	X1 SAV	2016-2017
BMW	BMW	X5 SAV	2014-2017
BMW	BMW	X6 SAV	2015-2017
BMW	BMW	X5	2015-2019
FCA US	Chrysler	200	2015-2017
FCA US	Chrysler	300 LX	2016-2017
FCA US	Chrysler	PT Cruiser	2001-2002
FCA US	Chrysler	Town & Country	2001-2007
FCA US	Dodge	Caravan	2001-2007
FCA US	Dodge	Challenger	2015-2017
FCA US	Dodge	Charger/Magnum LX	2016-2017
FCA US	Dodge	Grand Caravan	2001-2007
FCA US	Jeep	Cherokee	2016-2017
Ford	Ford	Crown Victoria	2004-2011
Ford	Ford	F150	2015-2017
Ford	Ford	Mustang	2015-2017
Ford	Lincoln	Town Car	2004-2011
Ford	Mercury	Grand Marquis	2004-2011
General Motors	Buick	Envision	2016-2017
General Motors	Buick	LaSabre	2002-2005
General Motors	Buick	Terraza	2005-2008
General Motors	Buick	Enclave	2008-2017
General Motors	Buick	Encore	2013-2017
General Motors	Buick	LaCrosse	2005-2009
General Motors	Buick	Lucerne	2006-2011
General Motors	Buick	Rainier	2004-2007
General Motors	Buick	Rendezvous	2002-2007
General Motors	Cadillac	ATS	2013-2017
General Motors	Cadillac	CTS	2003-2017
General Motors	Cadillac	Deville	2002-2005

General Motors	Cadillac	DTS	2006-2011
General Motors	Cadillac	ELR	2013-2016
General Motors	Cadillac	Escalade 1500	2002-2017
General Motors	Cadillac	Escalade ESV	2002-2017
General Motors	Cadillac	Escalade EXT	2002-2013
General Motors	Cadillac	SRX	2004-2016
General Motors	Cadillac	STS	2005-2007
General Motors	Cadillac	XLR	2004-2009
General Motors	Cadillac	XT5	2017
General Motors	Chevrolet	Avalanche 1500	2002-2013
General Motors	Chevrolet	Avalanche 2500	2002-2006
General Motors	Chevrolet	Camaro	2010-2017
General Motors	Chevrolet	Captiva	2011-2017
General Motors	Chevrolet	Cavalier	2000-2005
General Motors	Chevrolet	Colorado	2015-2017
General Motors	Chevrolet	Corvette	2005-2013
General Motors	Chevrolet	Cruze	2016-2017
General Motors	Chevrolet	Encore	2014-2017
General Motors	Chevrolet	Equinox	2005-2017
General Motors	Chevrolet	Express 1500	2003-2017
General Motors	Chevrolet	Express 2500	2003-2017
General Motors	Chevrolet	Express 3500	2003-2017
General Motors	Chevrolet	HHR	2006-2010
General Motors	Chevrolet	Impala	2006-2017
General Motors	Chevrolet	Malibu	2004-2012
General Motors	Chevrolet	Malibu Maxx	2004-2007
General Motors	Chevrolet	Monte Carlo	2006-2017
General Motors	Chevrolet	Silverado 1500	2000-2014
General Motors	Chevrolet	Silverado 2500	2000-2014
General Motors	Chevrolet	Silverado 3500	2000-2014
General Motors	Chevrolet	SSR	2003-2005
General Motors	Chevrolet	Suburban 1500	2000-2014
General Motors	Chevrolet	Suburban 2500	2007-2013
General Motors	Chevrolet	Tahoe 1500	2000-2014
General Motors	Chevrolet	Trailblazer	2003-2009
General Motors	Chevrolet	Trailblazer EXT	2003-2006
General Motors	Chevrolet	Traverse	2009-2017
General Motors	Chevrolet	Trax	2014-2017
General Motors	Chevrolet	Uplander	2005-2008

General Motors	Chevrolet	Venture	2000-2005
General Motors	Chevrolet	Volt	2011-2015
General Motors	GMC	Canyon	2015-2017
General Motors	GMC	Savana 1500	2003-2017
General Motors	GMC	Savana 2500	2002-2017
General Motors	GMC	Savana 3500	2002-2017
General Motors	GMC	Sierra 1500	2000-2014
General Motors	GMC	Sierra 2500	2000-2014
General Motors	GMC	Sierra 3500	2000-2014
General Motors	GMC	Terrain	2010-2017
General Motors	GMC	Yukon 1500	2000-2014
General Motors	GMC	Yukon XL 1500	2000-2014
General Motors	GMC	Yukon XL 2500	2000-2014
General Motors	GMC	Acadia	2007-2017
General Motors	GMC	Envoy	2003-2009
General Motors	GMC	Envoy XL	2003-2006
General Motors	GMC	Envoy XUV	2004-2005
General Motors	Hummer	H2	2003-2009
General Motors	Hummer	H3	2006-2010
General Motors	Isuzu	Ascender	2003-2008
General Motors	Oldsmobile	Silhouette	2000-2008
General Motors	Oldsmobile	Bravada	2002-2004
General Motors	Pontiac	Aztek	2002-2007
General Motors	Pontiac	Bonneville	2002-2005
General Motors	Pontiac	Montana	2000-2009
General Motors	Pontiac	Sunfire	2000-2005
General Motors	Pontiac	G6	2005-2010
General Motors	Pontiac	Grand Am	2005-2006
General Motors	Pontiac	Torrent	2006-2009
General Motors	Saab	Saab 9-3	2003-2012
General Motors	Saab	Saab 9-5	2010-2012
General Motors	Saturn	Aura	2007-2010
General Motors	Saturn	Outlook	2007-2010
General Motors	Saturn	Relay	2005-2008
General Motors	Saturn	Vue	2002-2007
Hyundai	Hyundai	Accent	2012-2017
Hyundai	Hyundai	Azera	2006-2011
Hyundai	Hyundai	Elantra	2007-2017
Hyundai	Hyundai	Genesis	2009-2013

Hyundai	Hyundai	Genesis Coupe	2009-2012
Hyundai	Hyundai	Sonata	2009-2010
Hyundai	Hyundai	Tiburon	2003-2005
Hyundai	Hyundai	Tucson	2005
Hyundai	Hyundai	Tucson	2007-2010
Hyundai	Hyundai	XG350	2002-2005
Hyundai	Hyundai	Equus	2011-2013
Hyundai	Hyundai	Entourage	2007-2009
Kia	Kia	Amanti	2006-2009
Kia	Kia	Forte	2014-2016
Kia	Kia	Optima	2001-2006
Kia	Kia	Rio	2006-2011
Kia	Kia	Rondo	2007-2010
Kia	Kia	Sedona	2006-2014
Kia	Kia	Sportage	2005-2016
Porsche	Porsche	Macan	2015-2020
Volkswagen	Volkswagen	Alltrack	2018-2019
Volkswagen	Volkswagen	Atlas	2018-2019
Volkswagen	Volkswagen	Golf	2015-2021
Volkswagen	Volkswagen	Golf R	2015-2019
Volkswagen	Volkswagen	eGolf	2015-2016
Volkswagen	Volkswagen	GTI	2015-2021
Volkswagen	Volkswagen	Jetta	2018-2019